THE ROLE OF PARENTAL BONDING AND EARLY MALADAPTIVE SCHEMAS IN SUICIDAL BEHAVIOUR

Rosanna Dale

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DECLARATION

I declare that I am the sole author of this thesis and that the work contained herein is my own. This thesis, or any part of it, has not been submitted for any other degree or professional qualification

Signed

Rosanna Dale

Dated 10.10.07

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ABSTRACT - WORD COUNT: 28736

Suicidal behaviour is a common presentation at Accident and Emergency wards throughout the United Kingdom. While the influence of early experiences upon later psychopathology has been investigated in other clinical populations, little research has examined the role of parental bonding in suicidal behaviour. Further, although the role of cognitive style in suicidal behaviour is often clinically highlighted, few studies have empirically investigated this. In particular, no studies thus far have examined early maladaptive schemas in suicidal behaviour. A better understanding of this population, and its nature, may impact on prevention and treatment of suicidal behaviour. Therefore, the current study sought to examine the role of parental bonding and schemas in suicidal behaviour, and questioned their association with suicidal intent and risk of repeating suicidal behaviour.

60 participants completed the study following their presentation at Accident and Emergency with suicidal behaviour, and routine Liaison Psychiatry psychosocial assessment. A semi-structured interview was conducted, in which participants completed measures of parental bonding (Parental Bonding Instrument); schemas (Young Schema Questionnaire); suicidal intent (Pierce Suicide Intent Scale); risk of repeating suicidal behaviour (Risk of Repetition Scale); anxiety (Beck Anxiety Inventory); and depression (Beck Depression Inventory). In the first phase of the study, measures of parental bonding, schemas, anxiety and depression were compared between this suicidal behaviour group and a primary care mental health group and a non-clinical group, collected in a previous study. The second phase of the study utilised a within group design and examined relationships on all measures within the suicidal behaviour group.

Initial analysis of variance exploration indicated that the three groups significantly differed on measures of anxiety, depression, parental care/ control and schemas. Post-hoc analysis demonstrated that there were no significant differences, however, between the suicidal behaviour group and primary care mental health group on measures of parental bonding. Within the suicidal behaviour group, significant associations were indicated between parental care and risk of repetition; parental control and risk of repetition; and schemas and risk of repetition. Suicidal intent was not found to be associated with any of the variables. Schemas were found to mediate the relationship between parental bonding (care and control) and risk of repetition. Further, the schema of Social Alienation was found to mediate the above relationship between parental bonding (care and control) and risk of repetition. The schema of Defectiveness/ Shame was found to mediate the relationship between parental control and risk of repetition.

The findings of the current study emphasise the complexities of suicidal behaviour and support a 3-stage model for suicidal behaviour. Although causality cannot be assumed, the findings highlight the importance of not only early experiences, but of schemas in suicidal behaviour. Early identification, prevention and treatment work may benefit from attention to schemas, focussing in particular on themes of social alienation and defectiveness/ shame.

CHAPTER 1:

INTRODUCTION

1.1 GENERAL INTRODUCTION

In the United Kingdom, suicidal behaviour is one of the leading five causes of admissions to Accident and Emergency wards. Although the difficulties with terminology in this area shall be further discussed in section 1.2.2, in the current study, suicidal behaviour is understood as a deliberate act of actual or potential harm to the self, undertaken with a degree of suicidal intent, with non-fatal outcome, regardless of purpose or method. It is important to better understand suicidal behaviour, in the hope of preventing suicide. Many of those who engage in suicidal behaviour, do so repeatedly and are at increased risk of suicide. Examining the risks for repeating suicidal behaviour is therefore important and several pertinent factors have been identified. One important aspect of suicidal behaviour is level of suicidal intent, which has been associated with risk of repetition.

Despite many current psychological therapies focussing on 'here and now' symptomatology, most acknowledge, in formulation, possible predisposing factors. An understanding of these facilitates selection of the most appropriate treatment and can aid prevention strategies. Many factors have been considered in the understanding of the development of psychological difficulties and it has been long established that experiences in childhood are influential in psychological development. Within this area, parental rearing styles have been considered and perceptions of poor parental bonding have been linked to later psychopathology such

as depression and anxiety. Despite support for this finding, little attention has been paid to the potential mechanisms underlying this association. Our schemas and the way we think of ourselves and the world around are shaped by our early experiences, including our experiences of the parenting we receive. Thus, examining the contribution of early maladaptive schemas to the relationship between parental bonding and psychological distress is logical and has been examined in primary care mental health patients (Murray & Winton, 2007). However, these relationships have yet to be investigated in patients following an episode of suicidal behaviour.

It is assumed that those who present with suicidal behaviour will indicate more symptomatic levels of anxiety and depression than those in primary care mental health settings without current suicidal behaviour. Whether this suicidal behaviour group presents differently in terms of their parental bonding and early maladaptive schemas has yet to be examined and may have important implications for their early identification and subsequent treatment. Several family factors have been proposed as risk factors for suicidal behaviour but studies into parental bonding in this group have not been conclusive. Similarly, although depressive thinking has been linked to suicidal behaviour, enduring schemas have yet to be examined in this population. Neither parental bonding nor schemas have been investigated in relation to two of the key presenting constructs of suicidal behaviour: intent and risk of repetition. Whether schemas offer a mediating role between parental bonding and suicidal behaviour has thus far been a neglected area of research. Our understanding of suicidal behaviour is growing and developing but to aid effective suicide prevention, a better understanding of this phenomenon is needed.

Therefore, in the current study, among a suicidal behaviour group, parental bonding and schemas will be examined and their relationship with suicidal intent and risk of repetition explored. The first section of the introduction will look at suicidal behaviour, including the extent of the problem and our current understanding of this relevant patient population. The second section of the introduction provides details of the assertion of early experiences contributing to psychopathology. This will include a summary of attachment theory and the concept of parental bonding and its implication for psychological development. Key studies examining parental bonding and psychopathology will be reviewed. The following section will review studies which have looked at parental bonding in suicidal behaviour. The next section will look at the development of research in the area of parental bonding and will examine the literature which looks at the role of cognitions and schemas in the relationship between parental bonding and psychological well-being. Again, suicidal behaviour will be furthered discussed, in relation to schemas. This will lead in to the main questions and hypotheses of this study. The three main questions being whether a suicidal behaviour group differs from a primary care mental health group and a non-clinical comparison group in terms of parental bonding, maladaptive schemas and levels of anxiety and depression, and whether parental bonding and maladaptive schemas are correlated to key constructs of suicidal behaviour: suicidal intent and risk of repetition. Further, the study questions if schemas mediate any found relationships between parental bonding and the key constructs of suicidal behaviour.

There will then follow a description of both the design and method used to answer the above questions. The results from the study will be presented and a discussion of the main findings will follow. The possible explanations for the findings, the implications of the findings and future research aims will be addressed.

1.2 SUICIDAL BEHAVIOUR

1.2.1 Introduction

This purpose of this chapter is to introduce the area of suicidal behaviour. Initially it is vital to examine the terminology used in suicidal behaviour literature. It is then important to consider the extent of the problem and to review the characteristics of those most likely to engage in suicidal behaviour and the most common methods used. Given the high likelihood of repeating suicidal behaviour, this shall be discussed and links with suicidal intent highlighted.

1.2.2 Terminology

Throughout the literature there are many terms used to describe suicidal behaviour: attempted suicide, deliberate self harm, parasuicide, self-poisoning, self-mutilation, to name a few. The variations in intention, motives, medical lethality and outcome intrinsic to each term, leads to confusion throughout the literature. As no international agreement on definitions currently exists, this results in ambiguity in the studies. This has an impact on any review of the studies into suicidal behaviour, with many studies interchanging terminology throughout. Generally, studies focus on three areas which shall be summarised here as; suicide, deliberate self harm and suicidal behaviour.

Suicide:

Suicide indicates a deliberate action which has resulted in death. Included in this act is a level of suicidal intent; the wish to kill one's self at the specific time of initiating the behaviour. The actual method, motives and intentions may vary, but the outcome is fatal. Suicide is cause for concern around the world, including the UK. There are around 800,000 suicides in the world each year, with approximately 5000 suicides in the UK per annum (Centre for Suicide Research, www.cebmh.warne.ox.ac.uk/csr/profile.html). In response to this, a current major government objective is to reduce suicide rates and this is reflected in recent health policies. The Scottish Executive's 'Delivering for Mental Health' (2006) highlights suicide prevention as one of its fourteen focus areas and supports their previous 'Choose Life' aim (2002) to reduce suicide rates from 2002-2013 by 20 per cent. Elsewhere in the UK, by the year 2010, it is hoped that the number of deaths as a result of suicide or underdetermined injury is reduced by a fifth, one of the four key health targets for England and Wales (Department of Health, 1999). Similarly, the United States government aims to reduce annual suicide rates from 10.8 per 100,000 to 6.8 per 100,000 (Department of Health and Human Services (US), 2000).

Deliberate self-harm:

Deliberate self-harm is understood as a conscious act to cause damage or cause physical pain to the self. The act is conducted without suicidal intent and is non-fatal. A recent survey has indicated that the most common method of deliberate self-harm is self laceration; 63 per cent of self-harmers have used this method. Other means included swallowing an object (14 per cent), burning themselves (6 per cent) or other

unclassified means (32 per cent; Meltzer *et al*, 2002). Reasons identified for deliberate self-harm in a survey by Meltzer *et al,* 2002, included releasing anger (75 per cent of respondents) and drawing attention to self (56 per cent). Other reasons noted include attempting to communicate to others, to impact on the care or help from others, to obtain relief from overwhelming situations or emotional experiences (House *et al,* 1998). Deliberate self harm is more likely to occur for a combination of the reasons given above. Logistic regression analysis has suggested that the most pertinent factors in deliberate self harm are; a number of stressful life events, age, psychosis, depression and mixed anxiety/depression and substance abuse (Meltzer *et al,* 2002).

Suicidal behaviour:

The focus of the current study is on suicidal behaviour, and therefore suicide and deliberate self-harm shall not be discussed further. Suicidal behaviour, in the current study, is understood as a deliberate act of actual or potential harm to the self, undertaken with a degree of suicidal intent, with non-fatal outcome, regardless of purpose or method.

1.2.3 The Extent of the Problem

Suicidal behaviour is a significant problem in the UK. A longitudinal study by Hawton and Fagg (1997) examining trends in suicidal behaviour, found that suicidal behaviour is one of the top five causes of acute medical admissions for men and women. In the UK, the University of Oxford's Centre for Suicide Research (the only

centre with a continuous monitoring system of suicidal behaviour) indicates current rates of around 170, 000 cases of suicidal behaviour hospital admissions per annum. This UK incidence is among the highest in Europe (Schmidtke *et al*, 1996).

While suicide is relatively rare, suicidal behaviour is more frequent and so much research is focussed on this, as a means of better understanding suicidal behaviour and, as a consequence, suicide. Of the known risk factors for completed suicide, suicidal behaviour has the strongest association, with suicide rate increasing 100 times the rate of the general population in the year following an act of suicidal behaviour (Greer & Bagley, 1971). A better understanding of those engaging in suicidal behaviour can aid interventions, inform risk assessments and indirectly influence suicide prevention strategies. However, it should be noted that not all those who engage in suicidal behaviour come to the attention of health services and so there are difficulties in drawing conclusions regarding the prevalence of suicidal behaviour. Further, the differences in the terminology used also impact on the accuracy of prevalence rates.

1.2.4 Characteristics of those who engage in suicidal behaviour

Gender:

Meltzer *et al* (2002) conducted a large community survey (n=8450) into suicidal behaviour in the UK and found that 4.4 per cent of the respondents reported a history of suicidal behaviour, with no significant differences between males and females. In contrast, the WHO/EURO Multicentre Project (Schmidtke *et al,* 1996), examining

suicidal behaviour across 16 catchment areas in Europe, found that in all but one centre (Helsinki) rates for female suicidal behaviour were higher than for male. This contrasts with the findings of sex differences in suicide; an inquiry into the prevalence of suicide in a UK population indicated that the majority of the cases (75 per cent) were male (University of Manchester, 2006). The difference in findings between sex ratios in suicide and suicidal behaviour may be explained by several reasons: males tend to choose more lethal methods; males have a greater tendency to engage in impulsive violence; males are more likely to substance abuse; and males are less likely to seek help.

Age:

In a community sample examining rates of suicidal behaviour, Meltzer *et al* (2002) found an age difference, with increased rates of suicidal behaviour noted in younger populations for both men and women; those aged 16-24 years old indicated the highest rates. Although those over 65 years were at a much lower risk, those in this age group who do engage in suicidal behaviour, were more likely to engage in fatal acts.

Ethnicity and marital status:

Although no significant differences between ethnic groups were noted, significant differences were indicated with marital status in relation to suicidal behaviour (Schmidtke *et al,* 1996); higher rates of suicidal behaviour were reported in single, separated or divorced participants than married (Schmidtke *et al,* 1996). While this finding has been queried as being indicative only of the increased alcohol use among

non-married people, logistic regression analysis indicates that marital status is associated with suicidal behaviour independently of alcohol abuse (Stack & Wasserman, 1995).

Employment and socio-economic status:

Higher rates of suicidal behaviour have been noted in those working in manual occupations (Kreitman *et al*, 1991) and those unemployed (Lewis & Sloggett, 1998; Schmidtke *et al,* 1996). Those in areas of higher socio-economic deprivation are also at increased risk of suicidal behaviour (Hawton *et al*, 2001).

Psychiatric disorders:

It is estimated that approximately 90 per cent of those who commit suicide had a mental disorder at the time of the event (World Health Organisation, 2006). Research has indicated that approximately half of the people who attend accident and emergency following suicidal behaviour meet the criteria for diagnosis of personality disorder (Dirks, 1998; Soderberg, 2001). However, according to the DSM IV TR (American Psychiatric Association, 2000), suicidal behaviour is a defining feature of borderline personality disorder. For men, the most common psychiatric disorder in those who engage in suicidal behaviour is adjustment disorder, followed by substance and alcohol disorders. For women, adjustment disorder has also been identified as the most common psychiatric diagnosis in those presenting with suicidal behaviour, followed by personality disorder without neurotic depression and then neurotic depression (Schmidtke *et al,* 1996). Depression, panic, phobias, psychosis

and alcohol and substance abuse were also associated with an increased risk of suicidal behaviour by Meltzer *et al* (2002).

Childhood sexual abuse and life events:

An association has been indicated between childhood sexual abuse and suicidal behaviour. A path analysis study (Gladstone *et al*, 2004) confirmed the contribution of childhood sexual abuse to later suicidal behaviour in a sample of depressed women. Stressful life events have also been associated with suicidal behaviour, including sexual abuse, financial stress, violence at home, running away from home and being homeless (Meltzer *et al*, 2002).

Incarceration:

Prevalence of suicidal behaviour within the prison setting is high and has been documented as between four to six times higher than the rate in the community (Dooley, 1990). This population, however, shall not be further examined in this study.

1.2.5 Methods of suicidal behaviour

The WHO/ EURO Multicentre Project (Schmidtke *et al,* 1996) found that the most common methods of suicidal behaviour were self-poisoning and wrist-cutting. Variations between countries have been noted in examinations of methods of suicidal behaviour and further, differences in methods used between five counties within New York found (Marzuk *et al*, 1992). The authors concluded that these

geographical variations may be due to differences in accessibility of certain methods, and it is also hypothesised that cultural difference may have been involved.

Clarke and Lester (1989) have identified 20 factors which influence method of choice. These include availability, technical skills, anticipated pain, consequences of failure and costs.

1.2.6 Risk of repetition

Kerkhof (2002) describes risk of repetition as;

'one of the core characteristics of suicidal behaviour' (p.57).

Owens *et al* (2002) conducted a systematic review of those who repeat suicidal behaviour and found that approximately one in six people attending hospital following suicidal behaviour, will go on to engage in suicidal behaviour again that year. Indeed, those who engage in suicidal behaviour are at considerably higher risk of suicide than the general population and this risk is at its greatest during the first 12 months following the act. The WHO study (Schmidtke *et al,* 1996) reported that almost half of those engaging in suicidal behaviour had done so before; 42 per cent of males and 45 per cent of females. Platt and Kreitman (1990) found that 15 per cent of those admitted to a poisons unit had a history of at least 5 previous overdoses.

Assessment of the risk of repetition of suicidal behaviour attempts to predict the likelihood of the individual to repeat suicidal behaviour, which may or may not result

in suicide. According to Hawton and Van Heeringen (2002), several risk factors have been commonly associated with repetition of suicidal behaviour; a history of self-harm prior to the current episode, psychiatric history (in particular as an inpatient), unemployment, lower social class, alcohol or drug related problems, criminal record, antisocial personality, un-cooperation with general hospital treatment and higher levels of suicidal intent. House *et al* (1998) carried out a review of the 37 studies conducted up until that time into the repetition of suicidal behaviour and found repetition rates from 6 per cent to 30 per cent, with a median of 16 per cent (interquartile range of 13 per cent to 18 per cent). Differences in sample selection and differences in rates in different places are viewed as the reasons for the wide variation in repetition rates, as well as study design differences.

Measuring the risk of repeating suicidal behaviour is therefore important and is based on the noted risk factors. It is usually done in one of two ways; combinations of demographic and clinical risk factors noted at interview and recorded on checklists, or self-report questionnaires. There are several scales used in clinical and research practice, e.g. Risk of Repetition Scale (Buglass & Horton, 1974), Edinburgh Risk of Repetition Scale (Kreitman & Foster, 1991) and Suicide Assessment Checklist (Rogers *et al*, 1994).

However, scales used to predict suicide have been found to hold weak predictive power, due to the absolute risk of suicide being so low (Dennehy *et al*, 1994). Designing a useful measure for identifying the small proportion of those at risk of suicide is very difficult. This is demonstrated clearly through a study by Harriss and Hawton (2005) which looked at suicidal intent in suicidal behaviour. They

demonstrated that suicidal intent, at the time of the suicidal behaviour, was strongly associated with subsequent suicide, which suggests that suicidal intent is an important risk factor for suicide. However, although high levels of suicide intent were expressed at first presentation in those who later committed suicide, the majority (96 per cent) of patients predicted to die, as indicated by initial suicide intent scores, had not at follow-up (mean – 5.2 years).

Risk of repetition scales are also used to assess the risk of repeating suicidal behaviour. Studies have not demonstrated good positive predictive value of the scales for this purpose (Sakinofsky, 2002). Scores on standardised measures of risk of repeating suicidal behaviour show positively skewed distribution, resulting in a good positive indicator for those scoring high on measures, but an omission of the risk of some of those identified as low risk by the scales. They have also been criticised for not taking personality factors, such as impulsivity and problem-solving skills, into account. However, measures of risk of repetition can be used as tentative indictors of risk of repeating suicidal behaviour and can be clinically relevant for highlighting some patients in need of further specialist care and follow-up. Such measures are routinely used in research practice.

1.2.7 Suicidal Intent

Suicidal intent is the degree to which the individual wished to die at the time of engagement in the suicidal behaviour. Risk of repeating suicidal behaviour has been associated with suicidal intent (Harriss *et al*, 2005), although some difference were

indicated across the sexes (the association was found for both sexes, but was stronger for females). Because of the association between suicidal behaviour and suicide, and the association for both with suicidal intent, identifying those with high suicidal intent is an important factor in clinical and research practice. There are difficulties with measuring suicidal intent after engaging in suicidal behaviour; people tend to be ambivalent, reporting cognitive dissonance with both wishes to live and to die. Further, reported intent has been known to change quickly and self-report post-event is limited by factors such as shame, confusion, difficulty remembering the emotions surrounding the event and a desire to leave hospital, all of which may impact on responses. An association has been found between suicidal intent and lethality of the act (Haw *et al*, 2003). This association is often dependent upon the individual's knowledge of the medical seriousness of their actions.

Standardised measurements of suicidal intent focus on the circumstances of the act, including planning and attempts to avoid intervention from others, medical seriousness of the act and the individual's reported intention of death. The most widely used measures include the Suicide Intent Scale (Beck *et al*, 1974) and Pierce's Suicide Intent Scale (Pierce, 1977) which are very similar and highly correlated (r=0.929, Pierce, 1977). Niméus *et al* (2002) examined Beck *et al's* (1974) Suicide Intent Scale as a predictor for subsequent suicide. Although their results indicated that less than 10 per cent of those predicted to die by suicide by the scale were correctly classified as such, they found significantly higher intent scores amongst the eventual suicides and concluded that the measure could be a valuable tool in predicting suicide. Harriss and Hawton (2005) study of suicidal intent in

suicidal behaviour indicated similar findings. Thus, standardised measures of suicidal intent remain prominent in clinical and research practice.

1.3 THE INFLUENCE OF EARLY EXPERIENCES ON PSYCHOLOGICAL DEVELOPMENT

1.3.1 Introduction

The purpose of this chapter is to examine the influence of early experiences on psychological well-being. Several prominent psychological theories are based on the premise that early life experiences play an important role in determining subsequent development and influencing vulnerability to later psychopathology. The impact of early relationships on psychological development is frequently understood in terms of attachment. This theory is placed at the heart of our current understanding of the influence of early experiences on psychopathology and from this, research into the effects of parenting on a child through to adulthood has developed. As a continuation of this, parental bonding and how it is measured shall be discussed. The empirical support for the association between parental bonding and psychopathology shall be reviewed, namely in depressive and anxiety disorders, the most commonly researched areas.

1.3.2 Attachment Theory

Bowlby's name is seen as being synonymous with Attachment Theory. In the 1930s and 1940s, his observations of the impact of maternal separation on children were published (e.g., 1939, 1940, 1944) and his leadership at the Tavistock Clinic in London emphasised the importance of family factors in children's mental health. His

work for the World Health Organisation focussed on the mental health of homeless children in post war Europe and subsequent book, Maternal Care and Mental Health (1951), based on the available empirical evidence, concluded that in order for normal development to occur, it is necessary for an infant or young child to experience

'a warm, intimate and continuous relationship with his mother (or substitute), in which both find satisfaction and enjoyment' (pg. 13).

Bowlby (1958, 1969) proposed that the ties between a mother and her child have a biological basis constructed from an evolutionary perspective, based on survival. This is similar to Freud's idea that an infant attaches to his/her primary caregiver as a means of ensuring fulfilment of biological needs such as alleviation of hunger or pain (Freud, 1905). Bowlby (1969) summarises that to increase chances of survival, a child will try to maintain proximity to its mother for the provision of the basic needs of food, safety and protection, and in return, the mother may engage in protective behaviours. The child develops proximity-promoting behaviours, such as crying, to encourage this relationship. The mother's response allows the formation of what is termed as 'inner working models': cognitive representations of the self and others. While consistent, responsive and accessible care enables the child to develop positive working models based on trust, inconsistent and unresponsive care may lead to working models characterised by abandonment, hopelessness and self-criticism.

Ainsworth's (1963, 1975, 1978) work on infant attachment allowed Bowlby's ideas to be empirically tested and added to our current understanding of attachment theory. Her supervisor, Blatz, used the term 'secure base' to describe the security and stability provided by the family which then allows the child to experience life and develop skills, and Ainsworth's research in Uganda (1963, 1967) developed this notion of secure base and expanded it to examine the impact that disruptions to the secure base can have on a child. Her work, with colleagues Blehar, Waters and Wall (1978) using a procedure called the 'Strange Situation', wherein the mother-child interaction was observed following a brief contrived separation, resulted in the classification of three types of attachment. The first type is 'secure attachment' which was identified in over two-thirds of the sample. Here the child is confident in his/her mother's ability to provide comfort when proximity is threatened; the child readily explores the environment in the mother's presence, makes cautious approaches to the stranger and whilst the child is distressed upon separation, is enthusiastic upon reunion. The mother of the secure child is sensitively responsive to the child's distress and needs and is emotionally expressive and flexible. The other types were viewed as 'insecure' and further divided into 'anxious-avoidant' and 'anxious-ambivalent.'

'Anxious-avoidant attachment' supposes the child is unconcerned with his/her mother's presence or absence. They exhibit minimal distress upon separation and avoid or ignore the mother at reunion. The mother of the 'anxious-avoidant' child is described as rejecting and slow to respond to the child's distress.

The third attachment style proposed by Ainsworth and colleagues (1978) is 'anxious-ambivalent attachment' which indicates a child's preoccupation with gaining attention and/ or comfort. These children demonstrate little exploration of the environment, are distressed at separation and seek proximity at mother's return, yet appear inconsolable. If a child holds an ambivalent attachment, it is typical for the mother to be inconsistently responsive, offering little spontaneous affection, but is less rejecting than the mother of a child with an 'avoidant' attachment. Threats of abandonment are typically used as a means of discipline.

A fourth attachment style was later termed by Main and Solomon (1986) who examined those children that Ainsworth and colleagues (1978) left unclassified. This attachment style was named 'disorganised' and demonstrated unusual and chaotic behaviours, including freezing and confusion in response to separation and reunion. Chaotic or abusive parenting is associated with this style and a high correlation between maltreated children and disorganised attachment has been proposed.

Attachment styles have been studied in relation to mental health in children, adolescent and adults. Bowlby (1988) proposed that early experiences of parental loss, which induce an overall breaking of attachment, are risk factors for the development of later depression, although many studies have not found empirical support for this premise (see Parker, 1992 for summary of this). Bowlby (1988) continued that;

'variations in the way these (attachment) bonds develop and become organised during infancy and childhood of different individuals are major determinants of whether a person grows up to be mentally healthy' (p.2).

Insecure attachment styles have been understood to lead to the development of particular psychological difficulties, whereas secure attachment provides the child with an immediate and stable source of security and acts as a model for developing later supportive relationships allowing good self esteem, positive affect, strong sense of personal autonomy and positive relationships. Although there is debate as to whether specific insecure attachment styles leads to specific psychological difficulties or provide merely a general vulnerability, avoidant attachment styles have been linked to externalised problems, such as aggression, conduct disorder, alcoholism or personality disorders (Sable, 1997). This can be understood in terms of the lesson the child receives from a rejecting mother who is uncomfortable with close contact; they learn to ignore, rather than cope with any feelings of distress and learn that you cannot trust others. Those with anxious-ambivalent attachment styles have been linked to internalised disorders such as depression, anxiety or eating disorders (Sable, 1997). Where the mother is inconsistent, the child becomes preoccupied with maintaining the mother's attention, at the expense of learning how to deal with the world around him. Therefore, later in life, he/she can become fearful and anxious of the world and may become isolated or withdrawn (Sable, 1997). Adults with disorganised attachment styles in childhood have been linked to dissociative states, developed from early experiences of being neglected which result in an intense fear of getting close to others. However, there is a lack of consistency in the literature

regarding types of attachment style and different diagnostic categories. Despite this, Bowlby (1977) concludes that attachment underlies the

'later capacity to make affectional bonds as well as a whole range of adult dysfunctions (including) marital problems and trouble with children as well as... neurotic symptoms and personality disorders' (p. 206).

1.3.3 Limitations of attachment theory and psychopathology

Insecure attachment styles are not, however, a primary cause on their own for psychological problems, but have been well documented as a risk factor or vulnerability. Most studies examining attachment style and psychopathology use correlation analyses and therefore, cause and effect conclusions should not be drawn. Indeed, insecure attachment patterns have been considered as realistic adaptations to the exposed childhood environments; it is only when the strategies adopted within the insecure attachment patterns are repeatedly, inappropriately applied later in new adult contexts that difficulties arise (Daniel, 2006). Rutter (1972) reviewed approximately fifty studies which were based on Bowlby's (1940, 1951) assertion of maternal deprivation and subsequent psychopathology and re-appraised Bowlby's (1951) conclusions. Rutter (1972) proposed that maternal deprivation only has longer term consequences under certain conditions. He suggests that the child's perception of the parenting may be important in understanding the risk of later psychopathology. Another caution underlying attachment theory is the assumption that the caregiving is continuous over time, but for many children, this is not the case. Further, it does not take into account additional attachment figures, such as those in full-time nursery care.

1.3.4 Parental Bonding

As part of our understanding of the area of attachment, parental bonding has been the focus of much interest. While it has been, in the main, agreed that the ways in which a parent or attachment figure behaves towards their child will influence the child's development and socialisation process, studies have aimed to determine the characteristics of parental behaviour which are key to this influence. Parental bonding was originally viewed as the interaction and relationship between a mother and baby immediately following birth. Klaus and Kennel (1976) understood bonding to be the skin contact experienced between a child and mother during a critical period in the first few hours and days of life. They proposed that unsuccessful bonding may have negative and long-standing consequences. Although this notion influenced past and current post-natal care, the theory has been criticised. Herbert *et al* (1982) suggest that caution should be taken in the generalisation of Klaus and Kennel's (1976) study due to the small sample size and the suggested bias of ethnicity and class of the sample. The importance of physical contact as a sign of positive attachment has also come under question by Sluckin *et al* (1983) who argue that mothers who feel little or no affection towards their infants can be outwardly caring and affectionate towards their child and that positive attachments can occur in the absence of post-natal skin to skin contact. This concept of bonding also lacks the inclusion of the reciprocity involved in bonding and is not supported by well controlled research studies.

More recently, parental bonding has come to be recognised as the emotional connections between a child and his/her parent or parents throughout the developmental years. The style of parenting a child receives and the impact this has on their psychological well-being as a child and later in adulthood, has been the focus of much research. Genetic and environmental factors have both been regarded as important determinants of a parent's behaviour towards his/her child. Kendler (1996) aimed to clarify the role of genetic and environmental factors in parenting style in a transgenerational study of monozygotic and dizygotic twins, their parents, and their children. He found that the style of parenting provided is determined by the parent's family of origin and genetic-temperamental characteristics of the parent. The receiving of parenting is determined by the offspring's temperamental characteristics, which are in part, genetically determined. In this paper, Kendler (1996) also highlighted the importance of the interactive nature of the parent-child relationship. The child's individual temperament has further been noted as influencing the nature of parental bonding by Chess and Thomas (1995). They proposed three main types of temperament in children: 'easy temperament' which represents the presence of regular feeding, sleeping and toileting patterns and the readiness of positive affect in response to change; 'difficult temperament' indicates difficulties with basic routines and the presence of negative emotions in response to change; and 'slow to warm up temperament' which indicates children presenting in-between the previous classifications. Parental responses were related to type of temperament, with difficult temperament children eliciting negative responses from their caregivers, when compared with those with an easy temperament. Those with difficult temperament were also indicated by longitudinal research as being at

increased risk for later psychological difficulties. Thus, bonding is influenced by characteristics of the child, the parent and the reciprocal dynamic relationship between the parent and the child. However, most of the research into parental bonding examines the parental contributions to the parent-child bond.

Ainsworth *et al* (1975) summarised four dimensions along which mothers were noted to display behaviour which impacted on the child's attachment and exploratory behaviour; sensitivity-insensitivity, acceptance-rejection, cooperation-interference, and accessibility-ignoring. Factor analysis studies have since further examined parental behaviour instrumental to parental bonding, and current understanding of parental bonding conceptualises experiences of parenting along two orthogonal dimensions: care and control, which result in four parental styles. Levels of care range from warmth and affection, to coldness and rejecting. 'Control' (sometimes termed 'overprotection') ranges from overprotective, controlling and encouraging of dependency, to the encouragement of the child's independence, autonomy and socialisation. This is schematically represented in Figure 1. There has been much support for these dimensions being key in parental rearing style, including factor analytic research (Arrindell *et al*, 1986; Gerlsma *et al*, 1991). Although the factor, punishment, has been examined as a third dimension in parental style, support for this has been inconsistent and so it is rarely considered in parental bonding research (Rapee, 1997). Optimal parenting links itself to attachment theory's secure attachment style wherein high 'care' echoes of the presence of a secure base and appropriate levels of low 'control' represents the encouragement and permission to explore their environment.

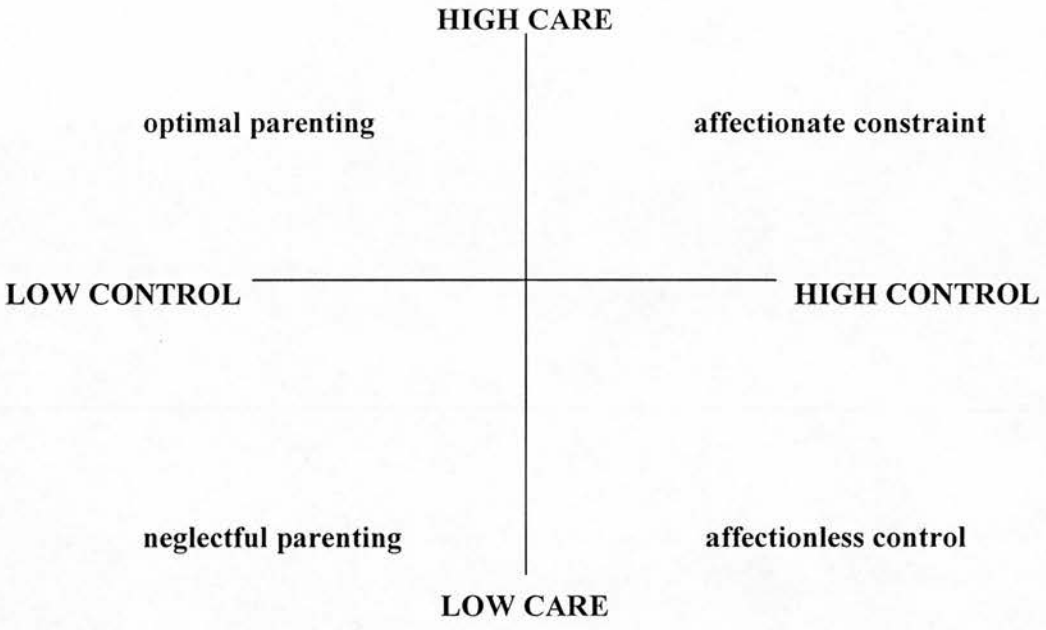

Figure 1: Parental style

1.3.4.1 Measuring Parental Bonding

How best to measure parental bonding has caused some debate. Some studies have focussed on parental self-report, either by administering questionnaires directly to parents asking about their child-rearing behaviours or attitudes, or by analysis of information gained via semi-structured interviews. However, the negative connotation associated with questions of care and control may limit respondents' willingness to provide honest answers. Further, this method is generally limited to questioning of parents with younger children rather than adult offspring. There is

little psychometric support for parental self-report. A few studies have focussed on direct observations of parent and child interactions but the methodological difficulties this holds, and its time consumption, means that limited attention has been paid to this area. Rapee (1997) reviewed several studies which utilised this method and concluded that this provided a glimpse of the parental behaviour but under artificial observation conditions. The most widely used method of early parental experiences is that of retrospective self-report measures.

Gerlsma *et al* (1990) reviewed retrospective, self-report measurements of parental bonding and found that many studies used unreliable and non-validated measures, which makes drawing clear conclusions in the area of parental bonding difficult. Gerlsma *et al* (1990) conducted a meta-analysis to review fourteen factor-analytically derived measures of parental style and concluded that there were only three measures which met basic psychometric criteria: the Childrens' Reports of Parental Behaviour Inventory (CRPBI; Schaefer, 1965), the Parental Bonding Instrument (PBI; Parker *et al*, 1979) and the Egna Minnen Beträffande Uppfostran (EMBU, translated from Swedish to mean 'my memories of upbringing'; Perris *et al*, 1980).

1.3.4.2 The Parental Bonding Instrument

The PBI is the most widely used measure of parental style in a range of clinical and non-clinical samples. It was designed by Parker *et al* (1979) with the aim of quantifying the assessment of an individual's perception of parental bonding. It is a

self report retrospective questionnaire measuring the subjective experience of being parented in the respondent's first sixteen years. The 25 item measure assesses parental bonding along the two identified dimensions of care and control, by providing a 4-point Likert scale in which respondents indicate the extent to which they agree with characteristics of care and control being apparent in childhood. Responses are completed separately for mother and father (or for those in the maternal/ paternal role). Using the dimension of care and control, it allows the allocation of each parent to one of four broad parental bonding styles: neglectful bonding (low care and low control), affectionless control (low care and high control), affectionate constraint (high care and high control) and optimal parenting (high care and low control). Maternal and paternal scores can also be combined to indicate parental care/ parental control. Optimal bonding and affectionate constraint are commonly viewed as positive parenting styles while neglectful parenting and affectionless control are considered negative parenting.

The original paper by Parker *et al* (1979) was generated from 150 participants consisting of students and nurses, and 500 general practice attenders. It indicated good internal consistency and re-test reliability. Whilst a number of studies have demonstrated the reliability of the PBI over shorter intervals (Gotlib *et al*, 1988; Mackinnon *et al*, 1989), a recent investigation by Wilhelm *et al* (2005) indicated the longer term stability of the PBI. Over a twenty year period, a non-clinical cohort was measured on the PBI and depressive and neurotic symptoms four times, and no differences were found on PBI scores across the time. Its validity has also been demonstrated through twin studies (Parker, 1986) and studies of adoptive children

(Parker, 1982). Parker (1981, 1989) continued his investigation of the psychometric properties of the PBI and demonstrated its ability as a reliable measure of both perceived and actual parenting. He supported the assertion that the PBI is both reliable (in terms of internal consistency and stability) and valid (concurrent, construct and predictive).

Research in the UK (Parker, 1983), USA (Parker, 1983) and Canada (Truant, Donaldson, Herscovitch & Lohrenz, 1987) suggests that mothers are scored as more caring and more controlling than fathers. When Mackinnon *et al* (1989) noted the same difference between sex of parent, they indicated that when the sex of the respondent was taken into account, the only significant difference was that women described their fathers as significantly more caring then men.

1.3.4.3 Parental Bonding Instrument and Mental Health

Depression studies:

Much research has been done in the area of parental bonding, in particular focussing on parental bonding and the development of mental health difficulties. Whereas early studies tended to focus on the importance of specific adverse or traumatic events in childhood, such as parental loss, there is currently a growth in the literature concerning the impact of more enduring aspects of early environment, such as parenting, on psychological development. Indeed, research has established the contribution of perceived parental bonding to various forms of adult

psychopathology, via comparisons to non-clinical populations using, in the main, PBI responses, which shall be discussed below.

Much of the research in this area has looked at the association between parental rearing styles and the development of depression in adulthood. Studies have focussed on different types of depressive disorders separately with different outcomes, suggesting specificity of parental style and disorder. Parker (1979a) and Parker *et al* (1987) indicated differences between types of depressions: Parker (1979a) found neurotic[1] depressives revealed significantly lower levels of parental care, and to a lesser extent, higher levels of maternal control, than either bipolar depressives or matched controls; Parker *et al* (1987) found lower levels of parental care and higher levels of parental control in a sample of neurotic depressives, in comparison to endogenous depressives and control groups. This notion that parental style presents a differential risk factor for discrete diagnoses of depression, however, has not be consistently supported (Gerlsma *et al*, 1993; Perris *et al*, 1986). While most studies investigate parental style focusing on associations with the two independent dimensions of care and control, some prefer to examine through the four parental styles the PBI allows. Similarly, while some studies examine maternal and paternal dimension separately, some combine the results. This makes drawing conclusions from the literature more difficult. However, the studies consistently demonstrate an association between anomalous parenting and depression in clinical populations (Enns *et al*, 2002; Parker, 1979a; Plantes *et al*, 1988). While both lack of parental care and high levels of overprotection have been associated with depression, several

[1] The term 'neurotic depression' indicates a form of depression which originates from psychosocial factors as opposed to genetic factors. It is frequently referred to as reactive depression.

studies have demonstrated a stronger association for care than control. Mackinnon *et al* (1993), in an investigation of parental bonding and depressive symptoms in a community sample, found no additive value of 'control' to the found association between anomalous parenting through low levels of 'care' and symptoms of depression.

Anxiety studies and other populations:

Anxiety disorders such as phobias (Cavedo & Parker, 1994), obsessive compulsive disorder (Turgeon *et al*, 2002), agoraphobia/social phobia (Parker, 1979b) and panic disorder (Leon & Leon, 1990) have been examined in relation to parental style and correlations between the above disorders and anomalous parenting have been found. However, results examining specific anxiety disorders and the two specific dimensions of parental bonding, care and control, have been inconsistent, with several studies indicating a significant association between anxiety disorders and low levels of care/high levels of control (Silove, 1986), while others indicate only an association of the anxiety disorder and low levels of care without an association with high levels of control (Parker, 1979b; Arrindell *et al*, 1983). In studies which did not find an association between high levels of control and anxiety, this may, however, have been due to small sample sizes preventing the detection of significant results.

Several other populations have been researched to add to our current understanding of the association anomalous parenting and psychopathology, including; addictions (Schweitzer & Lawton, 1989; Suchman *et al*, 2006), schizophrenia (Onstad *et al*, 1994; Parker *et al*, 1982), offending behaviours (Biggam & Power, 1998) and eating

disorders (Calam *et al*, 1990). Further, the association between high levels of parental control and low levels of parental care and later psychopathology has not only been found across various disorders, but across different cultures, including Norway (Pederson, 1994), Japan (Sato *et al*, 1997) and Australia (Cubis *et al*, 1989).

Overall, findings indicate an association between the PBI and psychological distress which is consistent across cultures. High parental control, for either one or both parents, and low care, again for one or both parents, have been demonstrated as the strongest predictors of psychological distress. Further, when combined, which is termed as affectionless control, these dimensions have been shown to be a greater risk. Debate continues as to whether anomalous parenting provide a differential risk for specific forms of psychopathology, or whether low care and high control exert a more general risk effect. Mancini *et al* (2000) concluded, from a study of parental bonding and both anxiety and depressive symptomatology in a non-clinical sample, that;

'poor parental bonding, especially low care, represents a general factor for emotional distress in adulthood, rather than the precursor of a specific disorder' (pg. 206).

The differences noted between specific depressive conditions (Parker, 1979a) and anxiety disorders (Arrindell *et al,* 1983) with regards to parental bonding however counter this, and to date, the research is non-conclusive.

1.3.4.4 Criticisms and cautions indicated regarding conclusions drawn from PBI studies

Concerns have been raised that the use of self-report measures may not correspond to actual parenting, but only perceptions of parenting. Parker (1981) sought to investigate this and compared mothers' ratings of their own behaviour with those of their offspring and found adequate correlations. As expected, mothers did rate themselves more favourably than their offspring, with lower levels of control and higher levels of care. Similarly, moderate correlations were noted with siblings in this study. Despite this, others have argued that perception of received parenting may actually be more important than the actual parenting style in the risk for subsequent psychopathology in any case (Wilhelm *et al*, 2005). Retrospective measures tend to focus on a broad timeframe, e.g. the first sixteen years of life, raising difficulties where the respondent has experienced inconsistent parenting during this period, changing over the child's developmental years. Future research may identify a specific crucial stage within development when risk factors for psychopathology are most salient. Other difficulties with retrospective measures include the limitations of normal memory for early childhood periods, general memory deficiencies associated with psychopathology, mood congruent memory processes, potential reconstruction by socialisation or conventions, bias in personality or trait characteristics. However, although these factors should not be ignored, Brewin *et al* (1993) reviewed the evidence for these criticisms of retrospective measures and found them to be exaggerated and inconsistent.

Although studies have indicated an association between parental bonding and later psychological distress, they indicate mere correlations, not causality. Several non-causal determinants have been suggested. It has been proposed that any associations between perceived parental bonding and depression may be merely a consequence of the negative cognitive bias found in depressive thinking. However, studies (Parker, 1981 and Plantes *et al*, 1988) have demonstrated consistency of scores, with no statistical difference, on the PBI across periods when participants are clinically depressed and later recovered. The robustness of the measure is further supported by the long term validity of the PBI (Wilhelm *et al,* 2005) despite changes in levels of depression. Similarly, studies have found that PBI responses are not influenced by anxiety states (Matthews & MacLeod, 1994). Other non-causal determinants proposed include genetic factors influencing parenting style as an independent variable and the notion that parents are responding to premorbid childhood characteristics of the future depressed individual. However, against the proposition as the genetic influence on the found association between parental bonding and psychopathology, Parker (1992) found similar associations in a sample of adoptees. Prospective research in the future may better inform our understanding of the impact of parenting on psychopathology. Studies have indicated that scores on the PBI are not significantly influenced by socio-economic status (Parker *et al*, 1979a), level of education (Mackinnon *et al,* 1989), respondent's age (Arrindell *et al*, 1989) or personality style (Duggan *et al*, 1998).

Cubis *et al* (1989) were the first to question the validity of the two factor model of parental bonding in a large study (n= 2147) with adolescents; factor analysis indicated three dimensions of parenting: one dimension of care and two dimensions of control named perceived social control and personal intrusiveness. Recently, interest in this area has grown. Since then, Kendler (1996) has proposed a three-factor model of parental bonding which divides 'control' into dimensions of 'authoritarianism' and 'protectiveness'. Using factor analysis, some recent studies have shown favour of three factor models of parental style. Lizardi and Klein (2002) found an association between parental bonding and low mood in a sample of outpatients with depression using the three-factor model, which was not found using the original two-dimension model. Similarly, Martin *et al* (2004) found support for the three-factor model in a sample of depressed adolescents. However, it could be hypothesised that 'authoritarianism' may be particularly applicable to adolescents and generalising these results to adults must be cautioned. Narita *et al* (2000) found little difference between the two models in an investigation in a community sample. This was, however, in a Japanese sample and has yet to be investigated in Western culture. Additionally, Kendler's (1996) three-factor model uses a subset of items used in the original PBI, which queries if above noted superiority of Kendler's model is due to a different factor structure or the use of a select subset of items. More research into the three-factor models should be encouraged before the original two-dimension model of parental bonding be disfavoured.

1.4 PARENTAL BONDING IN SUICIDAL BEHAVIOUR

1.4.1 Introduction

This section shall review the literature which examines parental bonding in the population of the current study: suicidal behaviour. It will discuss the importance of family factors in suicidal behaviour, comment on parental bonding and suicidal ideation and then review studies addressing parental bonding and suicidal behaviour.

1.4.2 Family factors in suicidal behaviour

From a theoretical stance, the difficulties which arise from poor attachment, such as difficulties regulating emotions and distress, can be seen in suicidal behaviour and associations then made. Adam (1994) conceptualises suicidal behaviour in adolescents with insecure attachment as an urgent appeal for care and protection. He suggests that when adolescents are unsure of a parent's physical, psychological or emotional availability, their distress at stressful times may be highlighted by dramatic and unregulated behaviour such as suicidal behaviour.

However, empirically, little attention has been given to early family factors in suicidal behaviour. Several studies have examined parental separation and suicidal behaviour, and a positive association has been found in the U.S.A. (Lester, 1993), Canada (Leenaars *et al*, 1993) and Norway (Rossow, 1993). Beautrais' (2000) review of adolescent suicidal behaviour suggested that 'impaired parent-child

relationships, poor family communication styles, and extremes of high and low parental expectations and control are associated with increased risk of suicide and suicide attempt among young people' (pg. 423). Despite her acknowledgement of many of the limitations of studies in the area, such as small sample size, no comparison group, she highlighted the potential importance of family factors in adolescent suicidal behaviour. This finding has been supported by a case-control investigation into risk and protective factors in adolescent suicidal behaviour which documented the importance of family related distress in risk for suicidal behaviour (Donald *et al*, 2006).

1.4.3 Parental bonding and suicidal ideation

Several studies have examined the relationship between parental bonding and suicidal thoughts/ ideation. A recent study in China (Lai & McBride-Chang, 2001) examined suicidal ideation, parental bonding and family climate in a group of adolescents. Their results indicated a significant association between suicidal ideation and low levels of care and high levels of control. However, the cultural differences render any generalisation of these findings to Western cultures tentative. In Australia, Martin and Waite (1994) found low levels of care and high levels of control to be associated with suicidal thoughts in an adolescent sample.

Although suicidal ideation is important in suicidal behaviour, not all of those presenting with suicidal ideation engage in suicidal behaviour and therefore, it is necessary not to generalise the findings about parental bonding from suicide ideators

to suicidal behaviour. Currently, there are few studies which have examined parental bonding in actual suicidal behaviour.

1.4.4 Parental bonding and suicidal behaviour

An OVID search[2], using a combination of the search terms 'parental bonding' or 'parental bonding instrument' or 'parenting style' with 'suicide' or 'suicidal behaviour' or 'self-harm', indicated twenty-seven studies. A further review of these articles, however, revealed that only nine studies have examined parental bonding in actual suicidal behaviour populations.

Martin and Waite (1994) sought to investigate the role of parental bonding and suicidal thoughts and acts in a sample of students. They concluded that 'affectionless control' indicated double the relative risk for suicidal thoughts, tripled the risk for suicidal self harm and increased the risk five fold for overall depression. However, self-harm was not measured by behaviour but only through self-report. Furthermore, both suicidal thoughts and suicidal behaviour were measured only by one self-report question each in the Achenbach Youth Self Report, thus limiting any conclusions from the study regarding parenting style and suicidal behaviour.

Goldney (1985) compared female patients admitted to hospital following suicidal behaviour to a non-suicidal group, in terms of parental bonding as measured by the PBI. He found that the suicidal group reported significantly lower levels of both

[2] Medline, PsycINFO and Embase databases were included in the search from 1950 to May 2007.

maternal and paternal care, and higher levels of control for both mother and father, than the comparison group. Silove *et al* (1987) replicated Goldney's study but although they found identical direction of results, the only significant finding was reports of paternal control being higher in the suicidal group, thus rendering ambiguity of the role of parental bonding in this population. The lack of further significant results may be related to the small sample size (N = 43 for suicidal behaviour group and N = 42 for comparison group). Adam *et al* (1994) sought to examine parental bonding and suicide ideations and behaviour in adolescents. They found that affectionless control was also associated with suicidal behaviour, but that this relationship was stronger for female than male participants and for maternal than paternal bonding. Although this provides preliminary insight into parental bonding and suicidal behaviour, its wider generalisation to the adult population is unclear. During the developmental period, the control dimension of parental bonding is particularly pertinent, as an important part of development is to achieve autonomy. Violato and Arato (2004) also looked at parental bonding as part of their study into attachment and suicidal behaviour in adolescents and indicated similar findings to Adam *et al* (1994), with affectionless control being discriminatory in distinguishing suicidal from non-suicidal adolescents. The small sample size (n=17), however, limits any conclusions.

Yamaguchi *et al* (2000) examined parental style and suicide attempts in a sample of patients with eating disorders. Although they found reports of significantly higher levels of control by both parents in the 'suicidal' eating disorder group compared with the 'non-suicidal' eating disorder group and the non-psychiatric group, there

were several limitation to the study; while the sample size for the total number of eating disorder inpatients was fifty-one, this constituted of only sixteen within the 'suicidal' group. Further, it was conducted in Japan, outside the cultural norms and family traditions of Western society. The study is also limited by its groupings; the 'suicidal' group is defined only by participants having a history of suicide attempts but it is not clear if this information is gained from self-disclosure or otherwise and timing since last attempt is not indicated. With regards to the non-psychiatric comparison group, participants were volunteers without a history of eating disorder, although suicide history is not considered. Although this study widens our understanding of experiences of patients with eating disorders, this specificity limits its scope for generalising to wider populations presenting with suicidal behaviour.

More recently, Diamond *et al* (2005) conducted a study which aimed to investigate parental bonding in a group of adolescents who presented at accident and emergency following self-poisoning. They found that suicidal behaviour was associated with significantly lower levels of maternal care, higher levels of maternal control and lower levels of paternal care than the comparison group. These results may support the proposition that suicidal behaviour in adolescents is an appeal for a perceived lack of care but does not fully indicate the notion that self-poisoning in teenagers represents a strive to break from imposed parental control. This study is limited in its ability to be generalised to adult UK populations by its inclusion of females only, its low sample size (N = 24 in suicidal behaviour group, N = 23 in comparison group) and its focus purely on adolescents. Further, it should be acknowledged that this

study was conducted in Israel and cultural differences in parenting should be taken into account.

Marchetto's (2006) study into self harm, trauma and borderline personality disorder included analysis of parental bonding. The study examined repetitive skin-cutters who attended accident and emergency ward, excluding those whose injuries were of suicidal intent. They found that although there was no significant differences regarding parental bonding between those who repetitively cut themselves and those who did not in the borderline personality disorder group, in the non-borderline personality group, those who self-harmed reported significantly higher levels of maternal and paternal control, and lower levels of maternal care than those who did not engage in repetitive skin-cutting behaviour. This study focussed only on deliberate self-harm only however, and behaviours with a level of suicidal intent were excluded from the study. Therefore, although furthering our knowledge of parental bonding in deliberate self-harm, it does not aid our understanding of parental bonding in suicidal behaviour.

Joyce *et al* (2006) sought, primarily, to examine if the T allele of G protein ß3 (GNß3) is associated with self-harm in a group of depressed patients. As part of their examination of risk factors, they assessed parental neglect by combining maternal and paternal scores on the PBI and defined neglect as those scores which were in the lower quartile for parental care. They found no significant association between self-harm and neglect. However, caution must be taken with these results; the control dimension of the PBI was excluded from analysis and only forty-six participants

were reported as self-mutilators, limiting statistical analysis. Further, again this study was only conducted with those engaging in deliberate self-harm and not suicidal behaviour.

Thus, although several studies have examined the role of parental bonding in suicidal behaviour, participants, methodology and design of the studies render this area of research inconclusive.

1.4.5 Mediating the association between parental bonding and psychopathology

As research into the association between parental bonding and psychopathology substantiates and develops, focus has shifted onto examining the mechanisms by which this vulnerability to psychopathology is conveyed. Identifying how this parenting-psychopathology relationship is mediated is clinically relevant as it allows a better understanding of the processes which may be appropriately the focus of treatment. Although theoretically the factors mediating the association between parenting and psychopathology have been proposed, few studies have examined this empirically. Further, with the PBI offering insight into two dimensions of parental style, it could be hypothesised that the two dimensions allow two different pathways to later psychological difficulties.

Rodgers (1996) conducted a longitudinal study of adults born in 1946, followed up at several points in their life. Part of the study examined parental bonding and adult affective symptoms and reviewed moderating and mediating factors. Several inter-correlated mediating factors were indicated, with interpersonal competence accounting for the largest part of the association. Enns *et al* (2000) sought to examine the possible role of several personality dimensions (neuroticism, dependency and self-criticism, and perfectionism) in mediating the relationship between anomalous parenting and adult depression. Although the results differed for men and women, anomalous parenting was linked to severity of depression for both sexes, and perfectionism and concern over mistakes mediated this relationship for men and women, in addition to neuroticism mediating the relationship for men and self-criticism for women. Although the factors which have been indicated as mediating the relationship between parenting style and psychopathology above have been termed as personality factors, concepts such as self-criticism can also be understood in terms of schema, i.e. defectiveness/ shame schema. However, Parker (1993) examined personality factors and dysfunctional attitudes as mediators between parental rearing style and depression and found that while low levels of maternal care were significantly associated with dysfunctional attitudes of perfectionism and low self-esteem, these variables were not indicated as mediated the relationship between parenting and depression, suggesting the need for further research in this area.

1.5 THE CONTRIBUTION OF EARLY MALADAPTIVE SCHEMAS TO OUR UNDERSTANDING OF THE ASSOCIATION BETWEEN PARENTAL BONDING AND PSYCHOPATHOLOGY

1.5.1 Introduction

This section shall examine the importance of cognitions in the development and maintenance of psychopathology and their potential as mediators between parental bonding and psychopathology. Young's (1990) concept of early maladaptive schemas and how they are measured shall be discussed and their links with parental bonding reviewed.

1.5.2 Cognitions in psychological development

As previously noted, according to attachment theory, children develop internal working models of themselves and others as a result of their experience of the relationship held with their caregiver. Bowlby (1969) suggested that if inner working models are, as a result of insecure attachment, developed with negative representations, this increases the risk for later psychopathology. This notion resonates with Beck's cognitive model (1967), which highlights the importance of early experiences in the formation of core beliefs, central to the cognitive understanding of the development and maintenance of psychological disorders such as depression. He proposed a three stage chain of events which lead to depression; firstly in childhood, children learn from their environment, particularly salient

relationships, secondly these experiences lead to the formation of beliefs. When the parent-child interaction is dysfunctional, in particular in critical and/or strict parenting, this increases the risk of the development of maladaptive beliefs. These beliefs or schemata are core cognitive structures which operate at an unconscious level. Beck (1967) continues that these beliefs, in stressful periods, can trigger and maintain emotional dysfunction and psychopathology, through negative automatic thoughts. These thoughts are cognitively biased and function at a more superficial level consistent with the underlying schema. In depression, themes of loss and failure are central, whereas threat and danger are the focus in anxiety. This model is drawn upon in cognitive therapy and has been successfully utilised to treat a variety of disorders, in particular, anxiety (Hunot *et al,* 2007) and depression (DeRubeis *et al*, 1999).

Expanding upon Beck's cognitive model, Young (1990) focussed more specifically on the concept of schemas, by formalising a model depicting the development of schemas, how they function and the difficulties they can create. He coined the phrase 'early maladaptive schemas' (hereafter abbreviated to EMS) which represent pervasive, broad and enduring cognitive themes or patterns developed during childhood, which form the core of the concept of self. He continues that most EMS are caused by noxious experiences which are repeated throughout the individual's childhood and adolescence. Although not all EMS are based in childhood trauma or mistreatment, Young *et al* (2003) note that many are. Although not empirically tested, Young (1990) proposes that EMS result from unmet core emotional needs in childhood. He postulates that secure attachment to others is based on nurturance,

which resonates with the care dimension of the PBI, and autonomy and sense of identity, which relates to the control dimension of the PBI. Young (1990) highlights that although peers and school play a part in the development of schemas, these are not encountered until the child develops, whereas 'the dynamics of a child's family are the dynamics of that child's entire world' (Young *et al,* 2003, pg. 10) and that the schemas which are formed earliest are the most pervasive. Thus, examining the role of schemas in the relationship between parental bonding and psychopathology is logical and shall be the focus of the next section.

1.5.3 Introduction to Early Maladaptive Schemas

In response to the finding that cognitive therapy, although indicated as a successful treatment for a variety of disorders such as depression, anxiety and eating disorders, has not been successfully applied to the treatment of personality disorders or more chronic cases, Young (1990) proposed that greater emphasis must be placed on the modification of schemas. Schemas are comprised of memories, emotions, cognitions and bodily sensations, and are focussed on perceptions of one's self and one's relationships with others. EMS are developed during the child's formative years in response to the relationship held with the primary caregivers. They are formed as a way for the child to understand and manage the world around them. Young (1990) argues that the formation and maintenance of EMS can lead to psychological problems through their influence on self-perception and their shaping of interpersonal relationships, resulting in negative cognitions and feelings of distress. Throughout the individual's life, information which corroborates the schema is

magnified, whilst any incongruent information is minimised or even dismissed, thus maintaining the hold of the schema. Maintenance also occurs through the individual's avoidance of behaviours which may empirically test out the validity of the schema. Thus, despite their maladaptive nature, EMS are self-perpetuating and can be highly resistant to change. They are acknowledged as central to the individual's concept of self, making them familiar and unconditional. The understanding that EMS are unconditional is seen through the filtering of information inconsistent with the held EMS. This theoretically differs our understanding of EMS from that of Beck's underlying assumptions which are conditional, e.g. a held EMS could be 'I am unlovable', whereas cognitive theory would shape this in terms of underlying assumptions such as 'if I can please others all the time, then I will be loved'. EMS, however, are more similar to Beck's (1967) concept of core beliefs which are understood to be alike in nature.

1.5.4 Measuring EMS

There is some inconsistency in the proposed means of assessing EMS. Whereas Beck *et al* (1991) advocated that schemas should be assessed uniquely for each individual, Young (1990) has suggested a classification system based on frequently occurring schemas in chronic and/or difficult psychotherapy patients. This resulted in the development of the Schema Questionnaire (YSQ) which originally consisted of 205 items which examine 16 EMS, and now understood to be 18. Young *et al* (2003) believe that these 18 schemas are present in the general population, but are more pronounced and extreme in clinical populations. The YSQ is currently the only

means of assessing EMS and it has now been translated into several languages, e.g. Japanese, Spanish, French, Dutch and Turkish. Its psychometric properties were initially examined by Schmidt *et al* (1995) in both clinical and non-clinical populations. They found that it had adequate internal consistency, reliability and validity. Factor analysis indicated only 15 of the originally proposed 16 schemas, with Social Undesirability not emerging as a distinct factor in the clinical sample. Subsequently, Lee *et al* (1999) replicated Schmidt *et al*'s (1995) factor analysis of the Schema Questionnaire in a clinical sample, including those meeting DSM-IV criteria for a personality disorder. They found that 15 of the 16 originally proposed EMS emerged as independent factors. Like Schmidt *et al* (1995), they found that Social Undesirability did not emerge as an independent factor and Young does not include this factor in his recent proposal (1998). They also indicated that Emotional Inhibition was not independent, which had been demonstrated by Schmidt *et al* (1995) in their non-clinical sample only. Schmidt *et al* (1995) concluded that the YSQ possesses good internal consistency and indicated that its primary factors are stable across clinical samples and across countries. Schmidt *et al* (1995) identified the YSQ as being significantly correlated with measures of psychological distress, with a substantial amount of variance accounted for by EMS in predicting levels of psychological distress. Further, subscales of the YSQ have demonstrated their ability to differentiate diagnoses or symptomatology: dependency and defectiveness/ shame schema has been associated with depressive symptoms (Schmidt *et al*, 1995); vulnerability and incompetence/ inferiority has been associated with symptoms of anxiety (Schmidt *et al*, 1995); and schemas within the disconnection and impaired

autonomy domain have been found to be more evident in those with personality disorders (Lee *et al*, 1999).

It is proposed that while schemas consist of memories, bodily sensations, emotions and cognitions, they do not account for behavioural responses. Instead of being part of the schema itself, behaviours are viewed as a coping response, a consequence of the presence of a schema. This suggests the importance of investigating the role of schemas in psychopathology and further, in suicidal behaviour. For example, an individual's way of coping, usually unconsciously, with a particular schema may be to engage in suicidal behaviour. There are three ways in which an individual copes with a schema: schema surrender wherein the person yields to the schema and act to confirm it; schema avoidance whereby the person tries never to activate the schema and schema overcompensation where the person tries to act, think and feel as if the opposite of the schema were true.

The schemas have been grouped into higher-order areas of functioning, most recently Young (1998) proposed 18 EMSs divided into five higher-order factors which is demonstrated in Figure 2.

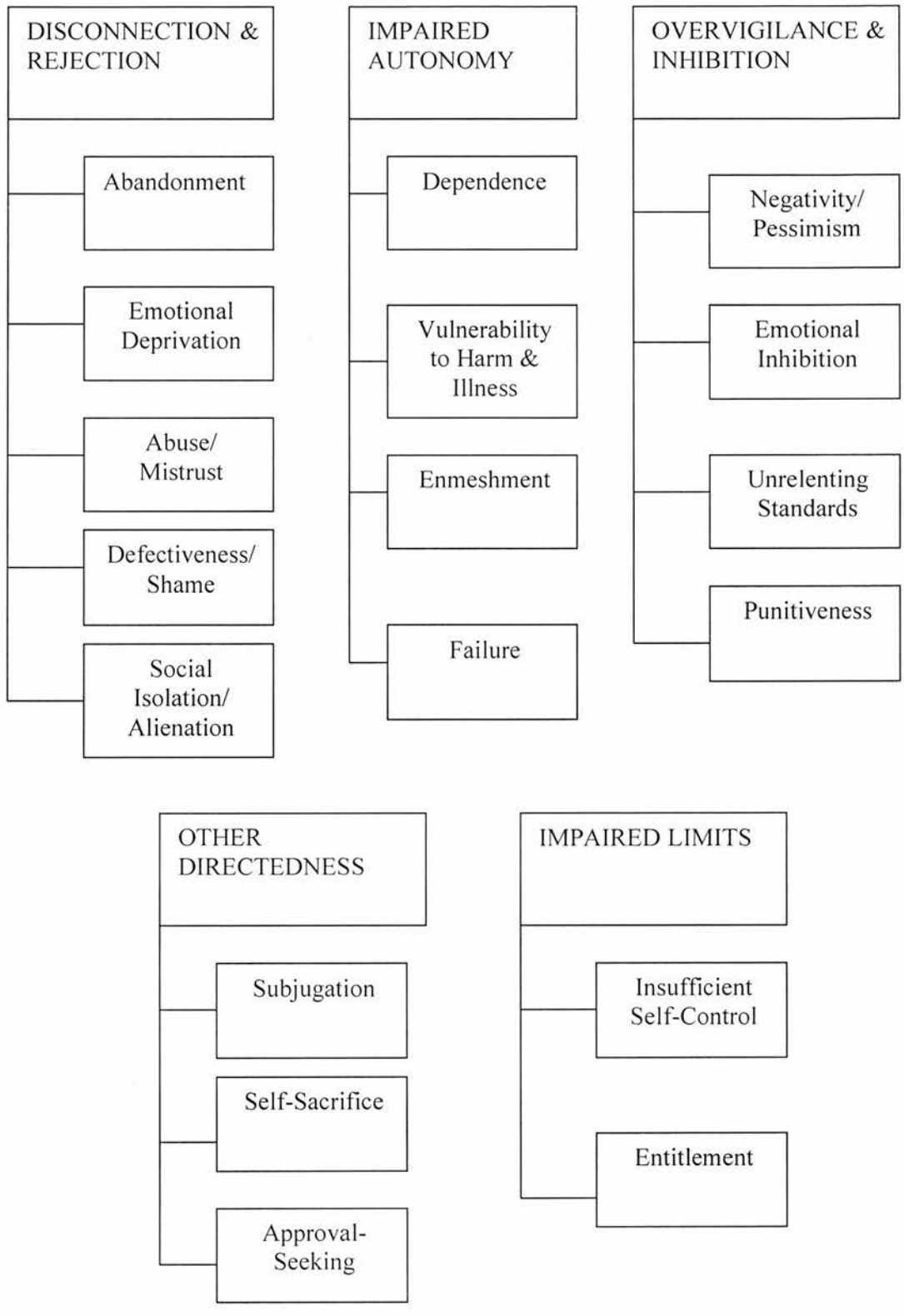

Figure 2. Young's hierarchical representation of early maladaptive schemas (Young, 1998)

Disconnection and Rejection Domain and links with parenting

Those who hold schemas within this domain are unable to form secure, stable and satisfying relationships with others as they perceive that their needs for safety, nurturance, love and belonging will fail to be met. They tend to either move from one destructive relationship to another, or avoid close relationships altogether. The Abandonment schema is the perception that connections to others are instable. They view others as being unable to provide emotional support or protection as they are seen as being unpredictable emotionally, unreliable or because they may die imminently or leave for someone better. Those who hold the Emotional Deprivation schema expect that their need for nurturance, understanding and protection will never be met. Those with the Abuse/ Mistrust schema view others are abusive, humiliating, untrustworthy and manipulative, while the Defectiveness/ Shame schema views the self as being fundamentally flawed, defective, worthless and unlovable, and is characterised by a sense of shame regarding the perceived defects. The Social Isolation/ Alienation schema hold that one is isolated from others and does not fit in because of some outwardly undesirable feature, such as being ugly or unintelligent.

Young *et al* (2003) propose that those with schemas within this domain tend to have been raised in unstable, abusive, cold or rejecting families, and have often had traumatic childhoods. This has, however, yet to be tested empirically and is based on

clinical observation.[3] Thus far, these domains have not been considered in relations to parental bonding; parental care and parental control. Within the parental bonding framework, this domain may be conceptualised as reflecting low levels of parental care, which develops the belief that their needs for love, safety and nurturance will never be met. It may also be understood in terms of high levels of parental control, which impact on autonomy and independence to form and maintain relationships.

Impaired Autonomy and Performance Domain and links with parenting

Schemas within this domain represent inabilities to separate from one's family and to function independently in comparison to peers. Difficulties arise in forming one's own identity and creating one's own life separate from parents and/or partners. The Dependence/ Incompetence schema views the self as being unable to competently function with everyday responsibilities independently. The Vulnerability to harm/ illness schema is an exaggerated fear that a disaster will strike at any time and denies the individual's ability to cope. Those with an Enmeshment/ Underdeveloped self schema are overly involved with others, such as parents or partner, which is detrimental to their full individuation and social development. This excessive involvement is based on a belief that at least one of the enmeshed individuals cannot cope with, or be happy without the constant support of the other. The Failure schema is the belief of being fundamentally inadequate in comparison to others, resulting in beliefs of incompetence and failure in areas of achievement such as school and career.

[3] The links between parenting and each of the domains is based on clinical observation.

With regards to typical family origin for those within this domain, Young *et al* (2003) hypothesise most had parents who did everything for them and tended to overprotect them. They also hypothesise that some may have lacked care or nurturance. This suggests, in terms of parental bonding, high levels of control, which results in a lack of ability to function independently. It may also be understood in terms of low levels of care which impacts on self-worth and feelings of failure.

Overvigilance and Inhibition Domain and links with parenting

Within this schema domain, people suppress their spontaneous feelings and impulses. Happiness, relaxation, close relationships, good health and self-expression are frequently sacrificed to meet the rigid, internalised rules about their own performance. Those with the Negativity/ Pessimism schema tend to persistently focus on negative aspects of life, such as disappointment, betrayal, conflict, loss or death, and minimise any positive focus. They tend to be hypervigilant for negative outcomes inducing worry and indecision. They have an exaggerated fear of making mistakes with disastrous repercussions. Emotional Inhibition schema is the perception of emotional expression having negative consequences such as embarrassment or harm. This results in the person constraining their spontaneous feelings, behaviours and communications, with the consequence of appearing flat, withdrawn or cold. Unrelenting Standards schema is the belief that unrealistically high standards must be met at all times. These standards are internalised and prevent shame or disapproval. As a consequence, constant pressure is felt and patients tend to

be hypercritical to themselves and others, and this impacts on the individual's health, relationships, self-esteem or sense of pleasure. Punitiveness schema holds that people should be severely punished for making mistakes, whether merely due to human imperfection, extenuating circumstances or not. It results in anger and hostility towards people who make mistakes, including themselves and a difficulty with forgiveness.

This domain is reflective of a childhood which was repressed and strict and in which spontaneity and pleasure limited. Seeking happiness and play was discouraged. In terms of parental bonding, this indicates a parenting style of high levels of control which results in suppression of emotions. Low levels of care may also be indicated reflected by negative beliefs about self and views on punitiveness.

Other-Directedness Domain and links with parenting

Those with schemas in this domain hold an excessive focus on meeting others' needs, rather than their own. This is done for the purpose of approval, emotional bonds and to avoid rejection. The Subjugation schema is the belief that personal needs, desires and emotions are less important that those of others, and so personal control is surrendered. It is characterised by excessive compliance and keenness to please and feelings of being trapped and of pent-up anger. Self Sacrifice schema is an exaggerated sense of duty and care for others, at the sacrifice of personal needs. This is done to gain self-esteem, spare pain in others, avoid guilt or maintain emotional bonds with those perceived as needy. It may result in resentment and a feeling that

personal needs are being unmet. Those with Approval-Seeking schema seek to gain the approval and recognition of others. This, however, is at the expense of developing a genuine sense of self-identity.

In terms of the familial origin of this domain, Young *et al* (2003) suggest that as children, these patients were not allowed to follow their own natural instincts and impulses. They were encouraged to restrain themselves in order to gain love and approval. It is suggested that this is related to high levels of control within the parental bonding framework. It may also reflect low levels of care which creates a fear of rejection.

Impaired Limits Domain and links with parenting

This domain focuses on those who have not fully developed a sense of limits as related to reciprocity or self-discipline. They often present as narcissistic, spoilt or selfish as they have difficulty respecting others' rights or keeping commitments. The Insufficient Self-Control/ Self-discipline schema is the belief that impulses or emotions need little restriction or constraint and that self-discipline is unnecessary. The Entitlement/ Grandiosity schema is the perception that one is entitled to act as one wants, without regard for others. They believe that they are superior to others, and as a result are free from the rules imposed on others. It is characterised by a sense of entitlement and privileges, and people with this schema can appear dominating, over-demanding and without empathy.

The schemas within this domain are proposed as a result of indulgence or over-permissiveness. It was not necessary in childhood for those with schemas within this domain to follow rules applied to others and to develop self-control. This relates to a parental bonding understanding of low levels of control. Although unclear, it may be that high levels of care are associated with this domain, which results in grandiose beliefs.

1.5.5 The mediating role of schemas in psychopathology

Because the formalised model of schemas, our understanding of their nature and subsequent therapy are relatively new, only a few authors have considered the potential role of core beliefs in the relationship between parental bonding and symptoms of depression. The theoretical links have been made by Bowlby and Beck, but empirical evidence is only recently growing. Whisman and Kwon (1992) and Whisman and McGarvey (1995) both investigated the perception of parenting, dysfunctional attitudes and symptoms of depression in college students and found that anomalous parenting (that of low care as measured by the PBI in Whisman & Kwon, 1992; and that of feelings of anger towards the caregiver and vulnerability to criticism by the caregiver, as measured by the Inventory of Adult Attachment in Whisman & McGarvey, 1992) and depressive symptoms were partially mediated by cognitive styles. Randolph and Dykman (1999) subsequently expanded on the above studies in their cross-section exploration of parenting and depression-proneness by proposing a three-stage causal link. They questioned the mediating role of dysfunctional attitudes in the relationships examined between four dimensions of

parenting and depression proneness in college students and also found support for the mediating role of dysfunctional attitudes. However, their results indicated that parenting dimensions of criticism and perfectionism appeared to better fit the model than those of care or control. Liu (2003) sought to examine the mediating role of thinking styles using a longitudinal design, rather than the previously employed cross-sectional, in the hope of inferring causality. Liu (2003) looked at the mediating responsibility of dysfunctional attitudes and self-worth in Taiwanese children and found that while dysfunctional attitudes partially mediated the relationship between parental care and depressive symptoms, perceived self-worth completely mediated the same relationship. More recently, Mason *et al* (2005) sought to investigate whether specific schema representations were related to attachment style in a group attending mental health out-patient services. They found that different attachment styles could be differentiated on the basis of their schema profile, although their study did not extend to examine if the schemas offered a mediating role in the found relationship between attachment style and psychological distress.

Despite these studies focussing on non-clinical populations and examining general cognitive styles rather than schemas, or attachment style rather than parental bonding, they highlighted the potential importance of cognitions in mediating the relationship between parenting and depression. Harris and Curtin (2002) explored the relationship between parental bonding and symptoms of depression in a college sample and examined the potential of early maladaptive schemas as mediating this relationship. They concluded that four schemas (defectiveness/ shame, insufficient self-control, vulnerability, and incompetence/ inferiority) partially mediated the

found relationship between parental bonding and depressive symptoms. However, this was in a non-clinical population, with no comparison group. Shah and Waller (2000) explored this further in a group of depressed outpatients, in comparison to a healthy community sample. They found that the depressed group differed from the comparison group in terms of parental bonding (lower levels of care and higher levels of control) and of a greater number of maladaptive schemas. Further, in the clinical group, multiple regression analysis suggested five schemas (dependence/ incompetence, emotional inhibition, failure to achieve, unrelenting standards and vulnerability to harm) were found to mediate the relationship between maternal bonding and paternal overprotection, and levels of depression. In the comparison group, the vulnerability to harm schema was found to be a partial mediator of the relationship between low levels of paternal care and symptoms of depression.

Several studies have examined the mediating role of schemas in the relationship between parenting and psychopathology in eating disorder populations. Leung *et al* (2000) were the first to bring together the variables of both parental bonding and schemas in patients with eating disorders and since then, several authors have examined the mediating role of schemas in the association between parental bonding and distress in this population. Leung *et al* (2000) sought to determine if parental style may account for maladaptive schemas in patients with anorexia nervosa or bulimia, when compared to a healthy group of women. Regression analysis indicated an association with the anorexic group between low levels of care and the presence of maladaptive schemas. Associations found in the bulimia and comparison groups were non-significant. However, the small sample size used (anorexics: n=30;

bulimics: n=27; comparison: n=23) limits these findings. Murray *et al* (2000) asked if 'shame' specifically mediates the relationship between parental bonding and symptoms of bulimia and found 'internalised shame' to perfectly mediate the link between paternal overprotection and bulimic symptoms. However, this study was conducted with a non-clinical sample. Meyer and Gillings (2004) explored the mediating role of schemas in the relationship between eating disorders and parenting by examining all early maladaptive schemas on the YSQ in multiple regression analysis. Their results indicated mistrust/ abuse beliefs as partial mediators in the relationship between paternal overprotection and severity of bulimic attitudes, again in a non-clinical sample. Subsequently, Turner *et al* (2005) examined the mediating role of core beliefs in the association between parental bonding and symptoms of eating disorders in a sample of non-clinical adolescents living at home. They found support for the mediating role of core beliefs in the association between anomalous parenting and eating psychopathology. In particular, schemas relating to shame/ defectiveness and dependence/ incompetence were found to act as perfect mediators in the relationship between parental care and maternal overprotection, and symptoms of eating disorders. Although their sample size was large (n=367), again this was with a non-clinical group, with no comparison group.

Murray and Winton (2007) have recently examined parental bonding and psychological distress (anxiety and depression) in a general primary care clinical psychology setting, compared with a non-clinical group, and they sought to analyse the role of early maladaptive schemas in any found associations. The clinical group presented differently from the non-clinical group in terms of all variables: lower

levels of parental care, higher levels of parental control, higher levels of anxiety symptoms, higher levels of depression symptoms and higher presence of maladaptive schemas. Amalgamating the two groups together for path analysis allowed an exploration of the role of schemas in the relationships between the dimensions of parental bonding and the levels of anxiety and depression. Early maladaptive schemas were found to partially mediate the association between parental care and anxiety symptoms. These findings must be taken with caution as the original relationship between parental care and anxiety was only a trend. However, early maladaptive schemas did mediate the relationship between parental care and depressive symptomatology, and between parental control and depressive symptomatology. Although this study did not analyse individual schemas due to the high correlations between the separate schemas, it indicates support for our understanding of the causal pathways linking parental bonding and later psychopathology, via the formation of maladaptive schemas.

1.6 THE IMPORTANCE OF SCHEMAS IN SUICIDAL BEHAVIOUR – A MEDIATING ROLE IN THE RELATIONSHIP BETWEEN PARENTAL BONDING AND SUICIDAL BEHAVIOUR?

1.6.1 Introduction

This section shall examine the importance of cognitions in suicidal behaviour and note the key findings. It will also address the operation of schemas in suicidal behaviour.

1.6.2 Cognitions in suicidal behaviour

Several studies have examined the role of cognitions in suicidal behaviour. In particular, the cognitive variable of hopelessness in suicidal behaviour has been investigated and its role as mediator in the relationship between depression and suicidality has been established (Beck *et al*, 1989; MacLeod *et al,* 2005). Studies have also found hopelessness to predict repetition of suicidal behaviour six months later (Petrie *et al*, 1988) and to predict completed suicide up to ten years later (Beck *et al*, 1989). MacLeod *et al* (2005) looked at the role of hopeless thinking in a group of repeat suicidal behaviour patients and found that a lack of positive thoughts about the future was strongly associated with hopelessness levels, rather than a presence of negative future related thoughts. Hunter and O'Connor (2003) also demonstrated the importance of lack of positive future thinking and further, upon examination of the role of social perfectionism, found that it uniquely differentiates those presenting

with suicidal behaviour from matched hospital controls. A recent review of suicidal behaviour in adolescents (Evans *et al*, 2004) identified seven studies which looked at hopeless thinking in suicidal behaviour, and found in all but one, a positive correlation between hopeless thinking and suicidal behaviour.

A review paper by Sheehy and O'Connor (2002) examined the literature on cognitive styles in suicidal behaviour and concluded that there is no consensual evidence to indicate that specific cognitions prime people to engage in suicidal behaviour but that suicidal behaviour is associated with a constriction in cognitive style which results in deficits in problem-solving and information processing. The importance of problem-solving deficits has also been empirically supported by McAuliffe *et al* (2006), with greater significance found for those who repeat suicidal behaviour.

Following a series of studies into dichotomous thinking styles in suicidal behaviour patients, Neuringer (1976) concluded that thinking in suicidal behaviour is more rigid and extreme than in non-suicidal patients, irrespective of psychiatric diagnosis. He proposed that those who engage in suicidal behaviour are unable to ignore or challenge dichotomous thinking patterns. Neuringer (1964) and Neuringer and Lettieri (1971) also empirically examined cognitive rigidity in suicidal behaviour and confirmed a tendency for cognitive rigidity and a lack of flexibility in thinking in suicidal behaviour.

However, while cognitions are clinically noted as important in suicidal behaviour, there is a lack of evidence relating EMS to suicidal behaviour.[4] Further, no studies, thus far, have examined the role of EMS in the relationship between parental bonding and suicidal behaviour in this population.

[4] OVID database searches with PsycINFO, EMBASE and MEDLINE using combination of the terms 'self-harm' 'suicidal behaviour' or 'suicide' with 'schemas' generating no relevant studies.

1.7 SUMMARY OF MAIN RESEARCH FINDINGS

The high incidence of suicidal behaviour in the United Kingdom and in the rest of the world has been demonstrated. The need to better understand this population was indicated, and suicide intent and risk of repetition were shown to be key factors in suicidal behaviour. The importance of parental factors in later psychopathology was demonstrated and role of parental bonding in suicidal behaviour was shown in current research to be inconclusive. Recent research has focussed on mediating factors in the relationship between parental bonding and psychopathology, and early maladaptive schemas have been considered. In suicidal behaviour populations, however, this has not yet been investigated.

1.8 AIMS AND HYPOTHESES

1.8.1 Aims

The purpose of the current study is to explore parental bonding and EMS in suicidal behaviour. As parental bonding and EMS have already been examined in a primary care mental health group and a non-clinical comparison group, scores on the measures of parental bonding, EMS, anxiety and depression shall be compared. Further, within the suicidal behaviour group, relationships between parental bonding, EMS, suicidal intent and risk of repetition shall be explored.

1.8.2 Hypotheses

1.8.2.1 Hypothesis 1

In comparisons with the primary care mental health group and non-clinical group, it is hypothesised that the suicidal behaviour group will present:

a) with increased levels of anxiety

b) with increased levels of depression.

c) with lower levels of perceived parental care

d) with higher levels of perceived parental control

e) with higher levels of EMS.

1.8.2.2 Hypothesis 2

Within the suicidal behaviour group, it is expected that anomalous parenting shall be associated with higher levels of suicidal intent. It is hypothesised that:

a) a negative correlation will be found between parental care and suicidal intent
b) a positive correlation will be found between parental control and suicidal intent.

It is also expected that anomalous parenting shall correlate with risk of repetition, and it is hypothesised that;

c) a negative correlation will be found between parental care and risk of repetition
d) a positive correlation will be found between parental control and risk of repetition.

1.8.2.3 Hypothesis 3

Within the suicidal behaviour group, it is expected that increased presence of EMS shall be associated with higher levels of suicidal intent. It is hypothesised that

a) a positive correlation will be found between EMS and suicidal intent.

It is also expected that increased presence of EMS will be associated with a greater risk of repetition. It hypothesised that:

b) a positive correlation will be found between EMS and risk of repetition..

1.8.2.4 Hypothesis 4

Examining a three stage model of suicidal behaviour, it is hypothesised that:

a) EMS will offer a mediating role between the found association between parental bonding (care and control) and suicidal intent; any direct relationships between parental bonding and suicidal intent will no longer be significant once the effect of the relationship between EMS and suicidal intent has been controlled for.

b) EMS will mediate any relationship between parental bonding (care and control) and risk of repeating the suicidal behaviour; any direct relationship between parental bonding and risk of repetition will no longer be significant once the effect of the relationship between EMS and risk of repeating the suicidal behaviour has been controlled for.

The following section will describe the method and design of the current study.

CHAPTER 2:

METHODOLOGY

2.1 DESIGN

For the first part of the study, a between-participants design was employed with comparisons made between a primary care mental health group, a non-clinical comparison group and a suicidal behaviour group. These groups all completed measures of parental bonding, early maladaptive schemas and were assessed for current symptoms of depression and anxiety.

The remaining majority of the study employed a within group design, with all participants' scores of parental bonding, dysfunctional schemas, suicidal intent and risk of repeating the suicidal behaviour explored within the suicidal behaviour group.

Ethical approval was sought[5] and granted from the local area's Committee on Research Ethics. Changes were made to the recruitment of participants by including a Liaison Psychiatry screening procedure for suitability of potential participants, and by having the principle researcher present throughout completion of self-report measures via semi-structured interviews. One minor change was also made to the participant information sheet.

[5] Letter of ethical approval can be found in Appendix 1

2.2 PARTICIPANTS

2.2.1 Suicidal behaviour group

Ninewells Hospital, Dundee, provides Accident and Emergency services to approximately 340,000 patients in Tayside. For over 20 years, it has been NHS policy that everyone who attends hospital following an episode of self-harm, should receive a psychosocial assessment (Department of Health and Social Security, 1984). It is the Liaison Psychiatry service that provides psychosocial assessment to those attending Accident and Emergency at Ninewells hospital, following an episode of suicidal behaviour. Current Liaison Psychiatry service runs between 9am to 5pm, seven days a week to carry out psychosocial assessments. The assessments are carried out while the patients are still at Ninewells Hospital but only when they are medically stable, and not in acute psychological distress. A recent department audit (Mei-Ling Ball & Kane, 2006) indicated 2127 cases of suicidal behaviour presenting at Ninewells Accident and Emergency department over a 24 month period. This suggests an annual incidence of 313 cases per 100,000 people in Tayside. 58.9 per cent of the cases were female, with the highest prevalence in the younger age category (16-25 years). Method of suicidal behaviour was investigated and 89 per cent presented following self-poisoning, 7.3 per cent with self-cutting and the remaining 3.7 per cent comprising of either a mixture of self-poisoning and self-cutting or other violence such as hanging or jumping from heights.

In the current study, participants who attended Liaison Psychiatry for psychosocial assessment, following an episode of suicidal behaviour, were invited to participate in the study. Potential participants were invited to participate following their routine psychosocial assessment with Liaison Psychiatry and after Liaison Psychiatry had screened for potential suitability in the study; those medically compromised or too distressed/ vulnerable to take part were not recruited. Further exclusion criteria included: being under the age of 16 years; being over the age of 65 years; meeting diagnosis for acute psychotic disorder or learning disability; currently neuropsychologically compromised, as judged by Liaison Psychiatric staff, e.g. sedated following overdose. Participants were also not invited to take part for the specific reasons of being known by the researcher or being under police care. Participants were recruited over a period of 73 consecutive days, with the principal researcher, who conducted the semi-structured interviews, available to recruit participants within this time-frame on 63 days. On the 63 days the principal researcher was available to recruit, the number of participants invited to take part in the study and their responses is demonstrated in Figure 3, along with reasons for those not invited to participate.

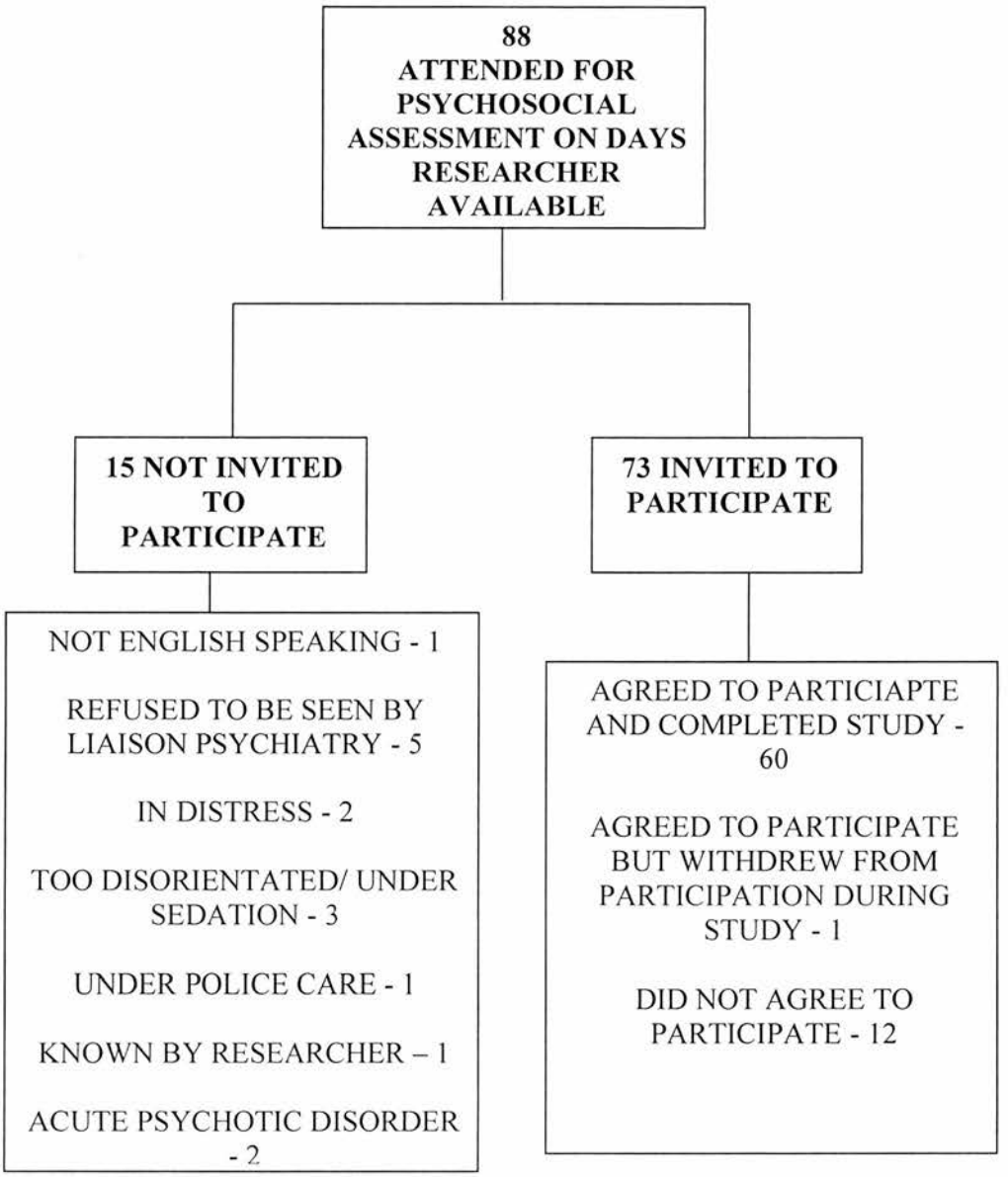

Figure 3: Summary of recruitment for study

Therefore, 60 (82 per cent) of those invited to participate, consented and completed the study. Demographic information and information on the suicidal behaviour for these participants shall be provided in the following chapter.

2.2.2 Primary Care Mental Health comparison group

Data collected under a previous study by Murray and Winton (2007), was used as this comparison group. Their study recruited those referred to, and offered a new appointment by the Tayside Area Clinical Psychology Primary Care Department, which accepts G.P. referrals, over a six month period. 151 potential participants were invited to take part in the study and 46 participants completed all given measures and were included in this group. The group consists of 20 males and 20 females, with a mean age of 40.50 years. Diagnosis was not the focus of their study, however, the majority of participants presented with anxiety (63.64 per cent) or depression (24.24 per cent). Responses on the completed measures were further analysed in the current study.

2.2.3 Non-clinical comparison group

As with the Primary Care Mental Health comparison group, data for the non-clinical comparison group is taken from a previous study (Murray & Winton, 2007). The control participants were recruited primarily[6] from personnel of the local psychiatric hospital (i.e. administrative, domestic, nursing and clerical staff), and attempts were made to equate this group with the Primary Care Mental Health group by age, gender and socio-economic status. Participants were not included in the study if they were currently receiving local psychological treatment. As such, 48 participants were included in this group; 18 males and 30 females, with a mean age of 39.85 years.

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[6] Other individuals known to the principle researcher of this previous study, who were not receiving psychological input, were also included to enhance sample size.

2.3 MEASURES

The Suicidal Behaviour group completed six measures. These were: a shortened form of the Parental Bonding Instrument (Pederson, 1994), the short form of the Young Schema Questionnaire (Young, 1998), the Beck Anxiety Inventory (BAI; Beck, Epstein, Brown & Steer, 1988), the Beck Depression Inventory Revised (BDI-II; Beck, Steer & Brown, 1995), the Pierce Suicide Intent Scale (Pierce, 1977) and the Risk of Repetition Scale (Buglass & Horton, 1974). The two comparison groups completed four of the above measures: the PBI shortened version, the YSQ short form, the BAI and the BDI- II.

2.3.1 The Parental Bonding Instrument

The PBI was used to evaluate participants' perceptions of early experiences with parents or those in the parental role. It allows the measurement of two main dimensions of parental attitudes and behaviour: care and control. This can provide an overall parental care score and parental control score, or separate care and control scores and levels for the mother and the father figure.[7] The original version of the PBI was developed by Parker and colleagues (1979) and consisted of 50 items. The psychometric properties of this, in terms of validity and reliability, have been well documented and are described in section 1.3.4.2. Pederson (1994) developed a shortened version of the PBI to reduce demand on both clinical and research times. This shortened version[8] holds 20 items, again designed to measure, through self-

[7] Further details of this can be found in section 1.3.4.2.
[8] See appendix 2

report, perceptions of care and control received from parental figures in the first 16 years of life. There are 10 identical items for both parents,[9] with each scale containing five items relating to care and five items relating to control. Each item is rated on a 4-point scale as to the extent of which the respondent agrees with the statement relating to the parents' behaviour towards them. Responses include; 'strongly agree,' 'agree,' 'disagree' and 'strongly disagree.' Scores for each item range from 0-3, which results in total scores for each dimension ranging from 0-15, with higher scores indicative of greater levels of care or control.

2.3.2 Young Schema Questionnaire- Short Form

In accordance with his model and therapy, which highlighted the importance of schemas in psychological difficulties, Young developed a questionnaire to measure the presence and extent of an individual's maladaptive schemas.[10] The original version (Young, 1990) consisted of 205 self-report items to assess 16 identified maladaptive schemas. The validity and reliability of this measure has been established and detailed in section 1.5.4. Factor analysis, however, has indicated only 15 of the proposed 16 schemas (Lee *et al,* 1999; Schmidt *et al,* 1995). The length of the original questionnaire prompted the development of a shortened version for more concise clinical and research use. The short form of the YSQ[11] (Young, 1998) consists of 75-items which measure the presence and strength of the 15 identified primary early maladaptive schemas. Good internal consistency, reliability and validity of this version have been demonstrated (Waller *et al*, 2001; Wellburn *et al*,

[9] Although the gender of the 3rd person pronoun differs accordingly
[10] Detailed further in section 1.5.4.
[11] See appendix 3

2002). Factor analysis by Wellburn *et al* (2002) indicated further support for the 15 identified schemas of the YSQ-Short Form in a clinical sample. The 15 assessed schemas are; emotional deprivation, abandonment, mistrust/abuse, social alienation, defectiveness/ shame, failure, dependency, vulnerability to harm, enmeshment, subjugation, self-sacrifice, emotional inhibition, unrelenting standards, entitlement and insufficient self-control. Five consecutive statements relate to each of these 15 subscales and respondents are required to indicate on a 6-point scale the extent to which these statements describe them as a person. Responses include; 1= completely untrue of me, 2= mostly untrue of me, 3= slightly more true than untrue, 4= moderately true of me, 5= mostly true of me and 6= describes me perfectly. Therefore, the higher the score, the higher the presence and strength of each maladaptive schema. Scores for each individual schema range from 5-30 and overall scores range from 75-450.

2.3.3 Beck Anxiety Inventory

Assessing current levels of anxiety symptomatology was done through utilising the Beck Anxiety Inventory[12] (BAI; Beck *et al,* 1988). The BAI is a self-report measure which consists of 21 items, each relating to symptoms of anxiety. Respondents are required to rate the degree to which they have experienced each symptom over the past week. The BAI was originally developed as a clinical means of assessing anxiety levels. The items within this measure were selected to prevent overlap with symptoms of depression and its discriminant validity against measures of depressive

[12] See appendix 4

symptoms, such as Beck Depression Inventory, has been demonstrated as better than other self-report measures of anxiety (Fydrich *et al*, 1992). The reliability and validity of this measure have been indicated (Beck *et al,* 1988; Fydrich *et al*, 1992). The 21 items relate to somatic symptoms (13 items), cognitive symptoms (5 items) and a combination of physiological and cognitive experiences (3 items). Respondents are required to indicate how much they have experienced each symptom over the last week, with choices of; 'not at all,' 'mildly,' 'moderately' or 'severely.' Scoring ranges from 0-3 for each response resulting in a total score ranging from 0-63. Higher scores suggest increased levels of anxiety symptomatology.

2.3.4 Beck Depression Inventory Revised

To measure levels of depressive symptomatology, the Beck Depression Inventory Revised[13] (BDI-II; Beck *et al,* 1995) was utilised. The BDI-II is a self-report measure, consisting of 21 items which assess aspects of depressive experiences. The BDI[14] is commonly used in both clinical and research practice to evaluate levels of depression, due to the ease in which it can be administered and its demonstrated reliability and validity (Beck *et al,* 1995). Respondents are required to choose between four possible choices, based on their experience over the last two weeks. Scores for each response range from 0-3, with higher scores indicated an increased level of depressive symptoms. Total scores range from 0-63.

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[13] See appendix 5
[14] Both in its original and revised format

2.3.5 Pierce Suicide Intent Scale

Pierce's Suicide Intent Scale[15] (1977) was developed as a means of assessing levels of suicidal intent in self-injury patients. It is similar to the measure of suicide intent designed by Beck *et al* (1974), but developed to be a more objective scale. Its reliability and validity have been demonstrated (Pierce, 1977, Pierce, 1981), and its similarity to the other commonly used measure of suicide intent by Beck *et al* (1974), has been established; correlations indicate high associations ($r = 0.9288$, $P < 0.001$; Pierce, 1977).

The Pierce Suicide Intent Scale consists of six questions completed by the clinician, which relate to the circumstances of the suicidal act including isolation, timing and suicide notes; four self-report questions relating to beliefs about lethality of the action, intention, premeditation and reaction to act; and two questions which measure medical risk and lethality of act. Three choices are given for each question, with scores for each ranging from 0 to 2. A total intent score therefore can range from 0-24, with a higher score being suggestive of a higher level of associated suicidal intent with the current suicidal behaviour.

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[15] See appendix 6

2.3.6 The Risk of Repetition Scale

The Risk of Repetition Scale[16] (Buglass & Horton, 1974) was used to estimate likelihood of repeating suicidal behaviour. It is a predictive measure of recurrence of suicidal behaviour and has been demonstrated as a satisfactory tool with regards to its easy application and validation. A prospective validation trial of another commonly used measure of risk of repetition, the Edinburgh Risk of Repetition Scale (Kreitman & Foster, 1991), indicated a similar performance by the two measures. Further analyses, however, using variations of scoring and follow-up, indicated inferior performance of Kreitman and Foster's scale (Hawton & Fagg, 1995).

The Risk of Repetition Scale was completed by the researcher and consists of six possible items to be highlighted if indicated in those who have engaged in the suicidal behaviour: anti-social personality, problem alcohol use, not living with a relative, previous out-patient psychiatric care, previous parasuicide admission and previous in-patient psychiatric care. A score of 1 is given for each indicated response, resulting in a total score, ranging from 0-6, with higher scores being indicative of an increased risk of repeating the suicidal behaviour.

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[16] See appendix 7

2.3.7 Demographic information

In addition to the above described measures, demographic information for each participant was collected. This included: age, gender; postcode;[17] employment status; method of suicidal behaviour; whether or not participants had engaged in previous suicidal behaviour; whether or not previous suicidal behaviour had resulted in hospital admission and when this last occurred; whether or not participants had previously been an inpatient at a psychiatric hospital and when this last admission was. This information was gathered via semi-structured interview.

[17] from this, DepCat scores of socio-economic deprivation could be calculated

2.4 PROCEDURE

As previously stated, data for the two comparison groups, the Primary Care Mental Health group and the Non-clinical comparison group, was collected through a previous study (Murray & Winton, 2007). The procedure for collection of this comparison data shall only be summarised here, but appendix 8 will define this in detail, as taken directly from Murray and Winton (2007). The remaining focus of this section shall be on the procedure for the data collected in the Suicidal Behaviour group.

Procedure for comparison groups:

Potential participants, as described in sections 2.2.2 and 2.2.3, were provided with an information sheet, outlining the details of the study and if consent was obtained, participants received a pack containing the BAI, BDI-II, YSQ-short form and PBI-short form, as well as demographic questions. All completed questionnaires were returned to the Principal Researcher (L. Murray) in a stamped addressed envelope.

Procedure for suicidal behaviour group:

Those who attend Ninewells Hospital Accident and Emergency service following an episode of suicidal behaviour are offered a psychosocial assessment, in keeping with government guidelines (National Institute for Clinical Excellence, 2004), by Liaison Psychiatry. These assessments occur, in the main, at the short-stay ward, where

patients are monitored overnight. They are usually seen the following day, once medically stable and when levels of distress have diminished. Following potential participants' routine psychosocial assessment and subsequent screening for eligibility by Liaison Psychiatry, they were invited to read the participant information sheet (appendix 9) and asked if they wished to participate.

Upon agreement to participate, the principal researcher met with each participant to discuss the study and participants were asked to sign a consent form (appendix 10). The principal researcher then conducted a semi-structured interview (outline of this in appendix 11). During this, each measure was introduced and participants offered the choice of completing each measure themselves or of the principal researcher reading aloud the questions/statements and the participants stating their responses, which the principal researcher would note. If this method was preferred, participants were given copies of the responses from which they could choose for each option. Giving participants the choice of response style allowed participants' preferences to be supported at a time when they were possibly in bed or without glasses etc., however, it may have impacted on the validity of the measures and biased responses. Demographic information was also elicited via semi-structured interview with the principal researcher.

In general, the semi-structured interviews were conducted in a private room in the short-stay ward, while participants were under the care of Liaison Psychiatry, and only when participants were medically stable and without acute distress. Participation or non-participation had no impact on medical or psychiatric care.

2.5 ANALYISIS OF DATA

2.5.1 Data Analysis

All statistical analyses were carried out using the Statistical Package for Social Sciences (SPSS) for Windows, Version 14. Statistical analyses carried out included analysis of variance to look at differences between the groups. The remaining analyses to investigate the main hypotheses of the study were within group analyses; Pearson's r correlations were conducted to examine relationships between the variables, and then path analyses were undertaken to examine the potential mediating effect of schemas on the relationship between parental bonding and suicidal intent and risk of repetition. The Baron and Kenny (1986) method of conducting path analysis was employed, which involved a series of multiple regression analyses at each node in the model.

2.5.2 Statistical Power

As schemas have, thus far, not been investigated in a group presenting following suicidal behaviour, let alone its role as mediating the relationship between parental bonding and constructs of suicidal behaviour, previous research in suicidal behaviour groups will not been used to aid sample size determination. Previous studies which investigated the role of schemas in the relationship between parental bonding and psychopathology were, however, considered. Investigating between-group

comparisons, Leung *et al* (2000) used samples sizes of 30 for their anorexic group, 27 for their bulimic group and 23 for their control group; Shah and Waller (2000) recruited 60 in their depressed out-patient group and 67 controls; and within group mediational studies have included sample sizes of 194 undergraduates (Harris & Curtin, 2002), and 46 clinical and 48 non-clinical participants combined to 94 as a whole sample size by Murray and Winton (2007). This latter study, however, was the only of the above to report effect size or power; this study indicated a medium effect size, with $\alpha = 0.05$ and power of 0.8 for between group analyses, and $\alpha = 0.05$ and power of 0.8 for within group multiple regression.

The number of participants required for a statistically significant result was assessed by comparison to other studies using the same measures, by using Cohen's (1992) tables for power calculations and following guidance by Clark-Carter (1997). According to Cohen's tables, when analysing differences between 2 to 8 independent variables, to achieve power of 0.80, $\alpha = 0.05$, an N of 52 in each of the 3 groups will detect medium effect sizes. To determine the potential mediating role of schemas in the relationship between parental bonding and suicidal intent/ risk of repetition, using multiple regression at each node for the path analysis, with $\alpha = 0.05$ and for power to be achieved of 0.8, a sample size of between 60 and 80 participants was required for the suicidal behaviour group.

CHAPTER 3:

RESULTS

3.1 EXAMINATION OF DISTRIBUTION OF DATA

Prior to statistical analyses, the data was explored and investigated for distribution. In the Suicidal Behaviour group, the presence of significant skewness or kurtosis were examined for by examining the ratio of skewness/ kurtosis index to its standard error, with a ratio of 1.96 or greater indicating a significant departure from normality. No significant skewness or kurtosis was identified, and examination of stem-and-leaf plots and box plots indicated no outliers which necessitated removal. Histograms for BAI, BDI, PBI- Parental Care, PBI- Parental Control, YSQ average scores can be found in the appendix (Appendices 12, 13, 14, 15 and 16 respectively). Data used from Murray and Winton (2007) for the purpose of comparison, was previously examined for normality and variables which exhibited significant skewness or kurtosis were transformed and outliers removed.

Parametric tests were conducted to test the hypotheses since assumptions of normality were met. Further, the robustness of parametric tests has been indicated, even when some assumptions of normality are not met (Clark-Carter, 1997). Significance was set at the <.05 level.

Where individual data were missing, a numerical value was assigned to exclude this individual variable from statistical analyses, whilst allowing them to be easily identified. 3 participants did not complete the PBI father form and DepCat scores were unavailable for 4 participants.

3.2 DEMOGRAPHIC DATA

60 individuals participated and comprised the suicidal behaviour group, with data from a further 94 participants who took part in a previous study (Murray & Winton, 2007) used for comparison purposes (46 in the primary care mental health group and 48 in the non-clinical group). The response rate for the suicidal behaviour group in the current study was 82 per cent[18]. Descriptive data is presented for the suicidal behaviour group (N=60), the primary care mental health group (N=46) and the non-clinical comparison group (N=48), in Table 1.

Pearson's Chi-square analyses indicated that the three groups did not differ according to sex (Chi-square $\chi^2 = 3.4$; d.f. = 2; p = 0.181). One-way ANOVA indicated no significant differences between groups according to age, $F(2,151) = 3.05$; p = 0.056. However, Pearson's Chi-square analysis indicated a difference between the three groups according to economic status, based on Deprivation Category scores[19]; Chi-square $\chi^2 = 24.97$; d.f. = 12; p = 0.015. Cramer's V (0.32; p = 0.015) confirmed the strength of this association, with participants in the suicidal behaviour group demonstrating decreased socioeconomic status.

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[18] Details in section 2.2.1

[19] All scores were calculated using Carstairs and Morris (1991) categories, based on postcode information for comparison purposes, but for demographic information alone, the suicidal behaviour group's socio-economic status was based on a more recent review of deprivation categories (Carstairs and Morris, 2001)

Table 1: Demographic information for the suicidal behaviour group

	Suicidal Behaviour group	**Primary care mental health group**	**Non-clinical comparison group**
GENDER	- 16 males; (26.7 %) - 44 female; (73.3 %)	- 20 males; (43.5%) - 26 females; (56.5%)	- 18 males; (37.5%) - 30 females; (62.5%)
MEAN AGE	35.1 years; SD = 12.9, Range = 17-60 years	40.5 years; SD = 11.3, Range = 19-65 years	39.85 years; SD = 12.7, Range = 18- 64 years
SOCIO-ECONOMIC STATUS	Range = 1 – 10 **DepCat 1**: 1.8% **DepCat 2**: 10.7% **DepCat 3**: 17.9% **DepCat 4**: 16.1% **DepCat 5**: 3.6% **DepCat 6**: 0% **DepCat 7**: 1.8% **DepCat 8**: 3.6% **DepCat 9**: 19.6% **DepCat 10**: 25%	Range = 1 - 6 **DepCat 1**: 6.5% **DepCat 2**: 39.1% **DepCat 3**: 8.7% **DepCat 4**: 17.4% **DepCat 5**: 13.1% **DepCat 6**: 8.7%	Range = 1 – 6 **DepCat 1**: 14.6% **DepCat 2**: 18.8% **DepCat 3**: 12.5% **DepCat 4**: 10.4% **DepCat 5**: 12.5% **DepCat 6**: 4.2%
EMPLOY-MENT STATUS	- 21 (35%) employed - 30 (50%) unemployed - 5 (8.3 %) student - 4 (6.7 %) ill-health/ incapacity	Information not available	Information not available

Information regarding the type of suicidal behaviour with which participants presented at hospital, was recorded and described in Table 2.

Table 2: Method of current suicidal behaviour

SUICIDAL BEHAVIOUR	• 22 (36.7 %) overdose only • 33 (55%) overdose + alcohol consumption • 2 (3.3 %) overdose + self mutilation • 1 (1.7 %) self mutilation only • 1 (1.7%) car exhaust fumes • 1 (1.7%) overdose + cut self-mutilation + alcohol consumption

Further information regarding previous suicidal behaviour and psychiatric history was also gathered for the suicidal behaviour group. 61.7 per cent of participants reported a previous history of suicidal behaviour, with the remaining 38.3 per cent reporting the current episode as their first time. Of the 61.7 per cent who disclosed previous suicidal behaviour, 51.7 per cent reported that this had resulted in attendance at hospital. The frequency of previous suicidal behaviours which resulted in hospital attendance is summarised in Table 3. A mean of 3.9 previous attempts was indicated (SD = 3.2) and range of 1 - 15.

Table 3: Frequencies of previous suicidal behaviour which resulted in hospital attendance

Previous suicidal behaviour	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Frequency	8	5	2	6	4	1	1	0	0	2	0	0	0	0	1

Time since the last suicidal behaviour was also noted and responses were categorised into six groups[20]: within the last week (4 participants); within the last month (3 participants); within the last 6 months (11 participants); within the last year (0 participants); within the last 5 years (5 participants); or more than 5 years (11 participants). No participants took part in the study on more than one occasion.

All participants in the suicidal behaviour group were also asked if they had a history of psychiatric hospital admission and were asked to indicate when this last occurred. 26 (43.3 per cent) respondents indicated a previous psychiatric hospital admission, with the remaining 34 (56.7 per cent) denying inpatient care at psychiatric hospital. Of the 26 that reported psychiatric hospital admission, 2 indicated that this attendance was within the last month; 4 within the last 6 months; 5 within the last year; 9 within the last 5 years; and 6 indicated it was 5 or more years ago.

[20] For those who had indicated previous suicidal behaviour which resulted in hospital attendance

3.3 EXPLORATION OF DATA

Correlations between maternal care and paternal care scores were examined within the suicidal behaviour group and no significant correlation was indicated ($r = -0.172$; $p = 0.95$). Correlations between maternal control and paternal control scores, however, indicated a significant association ($r = 0.3$; $p = 0.008$). Scores were combined for maternal care and paternal care, resulting in parental care score, and for maternal control and paternal control, resulting in parental control score for further analyses.

Combining maternal and paternal scores for both the dimensions of care and control, to create a parental care and control scores is a technique commonly undertaken in other studies (Harris & Curtin, 2002; Joyce *et al,* 2006; Parker, 1993; Randolph & Dykman, 1998) and was noted by Parker (1979) as one of the possible means of analysing data in the original development of the measure. Thus far, research into parental bonding has not indicated consistent support for a difference according to sex of parent and so the theoretical division of care and control into maternal and paternal scores is not supported. Further, Murray and Winton (2007) combined maternal and paternal scores and therefore, doing so in this study allows for more ready comparison between groups. In addition, further benefit of this data analysis lies in the increase in statistical power which comes from the use of fewer variables.

Three participants were unable to complete the PBI for a father figure, resulting in 3 missing values for the paternal care and paternal control. A mean score was

calculated of the remaining 57 participants' paternal care and control scores, and these mean scores were allocated to the missing paternal care and control scores, which allowed a combined parental care and control score for each of the 60 participants.

For between-group analysis of data, individual scores on the subscales of the YSQ were combined and averaged to create an overall average YSQ score ranging from 1-6. This allows comparisons with data from the similar study by Murray and Winton (2007), whose correlation matrix revealed that inter-correlations between average scores for each of the 15 schemas were extremely high. In the current study, a correlation matrix also found high correlations between individual schemas in the suicidal behaviour group (see appendix 17), further supporting the use of composite scoring. Scores on individual schemas were also examined.

For within group analyses of the suicidal behaviour group, as well as combining individual schema scores and averaging this total to create an overall average dysfunctional schema score, individual subscales of the YSQ were examined so as to fully explore the data.

Correlations were tested between suicidal intent and risk of repetition to ascertain that they were measuring different constructs. No significant association was identified between the two measure; $r = 0.076$; $p = 0.281$.

3.4 HYPOTHESIS-RELATED DATA ANALYSES

3.4.1 Between group analysis – Hypothesis 1

The first hypothesis examined the relationships between the suicidal behaviour group and the two comparison groups: the clinical and non-clinical comparison groups. It was expected that the suicidal behaviour group would indicate;

1. lower levels of parental care,
2. greater levels of parental control,
3. increased presence of EMS, and
4. greater levels of anxiety and depression than both comparison groups.

Table 4 reveals means, standard deviations and modes for all relevant measures[21] in the suicidal behaviour group and the two comparison groups: clinical group and non-clinical group, as well as One-way ANOVA and post-hoc Scheffé results. Stem and leaf plots can be found in appendix 18 for each measure in each group.

[21] Measures relating to suicidal behaviour were not included in this analysis: Risk of Repetition Scale and Pierce's Suicide Intent Scale.

Table 4: Mean scores, standard deviations (SD), modes and One-way ANOVAs for each variable across the three groups

	Suicidal behaviour group (1) N = 60 Mean (SD), Mode	Clinical group (2) N = 46 Mean (SD), Mode	Non-clinical group (3) N = 48 Mean (SD), Mode	F	Post-hoc Scheffé P<0.05
Parental care	14.77 (5.46), 15	14.41 (6.88), 15	19.62 (4.99) 21	9.44 p=0.000	1=2<3
Parental control	11.75 (4.74), 10	12.18 (4.84), 11	9.26 (5.43), 8	5.74 p=0.004	1=2>3
Dysfunctional schemas	3.54 (0.94), 3.8	2.95 (0.87), 3.29	1.99 (0.56), 1.85	47.93 p=0.000	1>2>3
BAI	30.80 (12.62), 34	20.37 (13.18), 7	5.56 (7.27), 2	65.18 p=0.000	1>2>3
BDI	38.82 (12.26), 47	24.35 (13.77), 12	8.81 (7.70), 6	83.72 p=0.000	1>2>3

A one-way ANOVA was conducted to examine any differences between groups across the five variables. A one-way ANOVA was utilised, as opposed to a MANOVA or ANCOVA, as the aim was to explore each variable independently across the three groups. This does not, however, allow analyses of covariance effects. The one-way ANOVA revealed significant differences across the groups on each of the variables: Parental care ($F(2,151) = 9.44$; $p < 0.0005$); Parental control ($F(2,151) = 5.74$; $p = 0.004$); Dysfunctional schemas ($F(2,151) = 47.93$; $p < 0.0005$); BAI ($F(2,151) = 65.18$; $p < 0.0005$); and BDI ($F(2,151) = 83.72$; $p < 0.0005$). Post-hoc analyses of Scheffé indicated that the above significances were not noted for Parental care between the suicidal behaviour group and clinical comparison group or Parental control between the suicidal behaviour group and clinical comparison group.

Levene's test of homogeneity of variance assumptions however indicated that although the homogeneity of variance assumption was not broken for Parental Care ($F(2, 151) = 1.1$, $p > 0.05$) or Parental Control ($F(2, 151) = 0.92$, $p > 0.05$), the assumption was violated for scores of anxiety ($F(2, 151) = 11.2$, $p < 0.05$), depression ($F(2, 151) = 11.3$, $p < 0.05$) and on the YSQ ($F(2, 151) = 7.1$, $p > 0.05$). Welch's test was conducted on scores of anxiety, depression and schemas across the three groups and supports the findings of differences between scores on these three variables across the groups: anxiety ($F(2, 93) = 90.2$, $p < 0.05$); depression ($F(2, 93) = 111.7$, $p < 0.05$); and YSQ ($F(2, 93) = 60.8$, $p < 0.05$).

A one-way ANOVA and post-hoc Scheffé was also conducted to examine any differences between the groups on scores of individual EMS, which is demonstrated in Table 5. Again, an ANOVA, as opposed to a MANOVA was utilised as the aim was to explore each schema independently. Table 5 highlights that, although significant differences were indicated on all EMS across the 3 groups, the only significant differences between the suicidal behaviour group and clinical comparison group were for schemas of; Defectiveness/ Shame ($F(2,151) = 27.38$, $p<0.005$), Dependency ($F(2,151) = 37.79$, $p<0.005$) Vulnerability to Harm ($F(2,151) = 35.51$, $p<0.005$), Self-sacrifice ($F(2,151) = 16.22$, $p<0.005$), Entitlement ($F(2,151) = 26.97$, $p<0.005$) and Insufficient Self-control ($F(2,151) = 31.02$, $p<0.005$).

Table 5: Mean scores, standard deviations (SD), one-way ANOVAs and post-hoc Scheffé for each EMS across the three groups

	Suicidal behaviour group (1) N = 60 Mean (SD)	Clinical group (2) N = 46 Mean (SD)	Non-clinical group (3) N = 48 Mean (SD)	F	Post-hoc Scheffé P<0.05
Emotional Deprivation	3.62 (1.33)	3.24 (2.14)	2 (1.06)	15.35 p=0.000	1=2>3
Abandonment	3.7 (1.62)	3.14 (1.56)	1.68 (0.86)	28.24 p=0.000	1=2>3
Mistrust/ Abuse	3.77 (1.34)	3.25 (1.35)	2.03 (0.86)	28 p=0.000	1=2>3
Social Alienation	3.28 (1.74)	3.04 (1.46)	1.93 (1.17)	11.9 p=0.000	1=2>3
Defectiveness/ Shame	3.54 (1.69)	2.5 (1.47)	1.55 (0.74)	27.38 p=0.000	1>2>3
Failure	3.2 (1.63)	2.55 (1.37)	1.77 (0.94)	14.55 p=0.000	1=2>3
Dependency	3.33 (1.3)	2.33 (1.13)	1.53 (0.63)	37.79 p=0.000	1>2>3
Vulnerability to Harm	3.52 (1.45)	2.92 (1.27)	1.56 (0.75)	35.51 p=0.000	1>2>3
Enmeshment	2.09 (1.5)	2.07 (1.13)	1.32 (0.73	6.58 p=0.000	1=2>3
Subjugation	3.62 (1.41)	3.1 (1.44)	1.81 (0.98)	26.36 p=0.000	1=2>3
Self-sacrifice	4.34 (1.35)	3.57 (1.31)	2.97 (1.05)	16.22 p=0.000	1>2=3
Emotional inhibition	3.64 (1.29)	3.09 (1.27)	2.15 (0.99)	20.71 p=0.000	1=2>3
Unrelenting standards	3.67 (1.44)	4.02 (1.14)	3.14 (1.26)	5.53 p=0.000	1=2>3
Entitlement	3.51 (1.18)	2.37 (1.14)	2.12 (0.78)	26.97 p=0.000	1>2=3
Insufficient self-control	1.14 (1.35)	3.36 (1.39)	2.28 (0.81)	31.02 p=0.000	1>2>3

3.4.2 Within group analysis

Pearson's *r* correlations were calculated for associations between variables in the suicidal behaviour group. All correlations between parental bonding, EMS and suicidal behaviour constructs (suicidal intent and risk of repetition) can be found in Table 6[22], and indicates a high level of correlations between some of the variables within the group (2-tailed).

Table 6: Correlation matrix of parental care and control, schemas, suicidal intent and risk of repetition, within the suicidal behaviour group

		PIERCE TOTAL	RISK OF REPETITION	YSQ TOTAL AVERAGE	PBI PARENTAL CARE	PBI PARENTAL CONTROL
PIERCE TOTAL	Pearson Correlation	1	.076	.072	-.150	.042
	Sig. (2-tailed)		.562	.582	.254	.751
	N	60	60	60	60	60
RISK OF REPETITION	Pearson Correlation	.076	1	**.378(**)**	**-.271(*)**	**.308(*)**
	Sig. (2-tailed)	.562		**.003**	**.036**	**.017**
	N	60	60	**60**	**60**	**60**
YSQ TOTAL AVERAGE	Pearson Correlation	.072	**.378(**)**	1	**-.284(*)**	**.472(**)**
	Sig. (2-tailed)	.582	**.003**		**.028**	**.000**
	N	60	**60**	60	60	60
PBI PARENTAL CARE	Pearson Correlation	-.150	**-.271(*)**	**-.284(*)**	1	-.242
	Sig. (2-tailed)	.254	**.036**	**.028**		.063
	N	60	**60**	**60**	60	60
PBI PARENTAL CONTROL	Pearson Correlation	.042	**.308(*)**	**.472(**)**	-.242	1
	Sig. (2-tailed)	.751	**.017**	**.000**	.063	
	N	60	**60**	**60**	60	60

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed)

[22] Variables which indicate a significant correlation are highlighted in **bold.**

The correlation patterns identified in Table 6 are further examined below.

3.4.2.1 Hypothesis 2: Parental bonding and suicidal constructs

The second hypothesis sought to examine associations within the suicidal behaviour group. It was hypothesised that parental bonding would be associated with the suicidal constructs of

1. risk of repetition, and
2. suicidal intent.

Aspects of parental bonding and suicidal behaviour which were significantly correlated were: parental care and risk of repetition ($r = -0.27$; $p = 0.036$; a small effect); and parental control and risk of repetition ($r = 0.3$, $p = 0.017$; a medium effect). Suicidal intent was not significantly associated with parental care or control. These significant associations are illustrated respectively in Appendix 19.

3.4.2.2 Hypothesis 3: EMS and suicidal constructs

Hypothesis 3 also looked at associations within the suicidal behaviour group and proposed an association between EMS and the suicidal constructs of

1. suicidal intent, and
2. risk of repetition.

EMS[23] were significantly positively correlated with risk of repetition (r = 0.378; p = 0.003; a medium effect) but not with suicidal intent (r = 0.72; p = 0.582). Further examination of the correlation matrix[24] allowed greater analyses of particular EMS and significant positive correlations were found between risk of repetition and the following EMS: Social Alienation (r = 0.51; p = 0.000; a large effect); Defectiveness/ Shame (r = 0.33; p = 0.009; a medium effect); Vulnerability to Harm (r = 0.31; p = 0.016; a medium effect); Subjugation (r = 0.3; p = 0.018; a medium effect); Emotional Inhibition (r = 0.29; p = 0.027; a small effect); Entitlement (r = 0.27; p = 0.04; a small effect); and Insufficient Self-control (r = 0.3; p = 0.02; a medium effect). These significant associations are illustrated in appendix 21.

3.4.2.3 Hypothesis 4: Mediational models

The final hypothesis focussed on mediational models and hypothesised that EMS would mediate the relationship between parental bonding and suicidal behaviour.

Path analyses were conducted by means of a series of regression analyses, as suggested by Baron and Kenny (1986), to examine any mediating effect of EMS on the relationship between parental bonding and suicidal behaviour.

There are two stages in the path analysis process, according to Baron and Kenny (1986). The first step involves intercorrelations of the variables and holds that each

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[23] total average YSQ score
[24] Which can be found in appendix 20

of the variables in the model must be correlated in order to test for mediator variables.

The second step in the path analysis process is to perform three simple regression analyses. Baron and Kenny (1986) state that simple regression analyses are adequate and that hierarchical or stepwise regression is not necessary. The first equation includes the regression of the potential mediator variable on the independent variable, and stipulates that the independent variable must affect the mediator variable. The second equation is based on the regression of the dependent variable on the independent variable, and the independent variable must affect the dependent variable. The third and final equation involves regressing the dependent variable on the independent and mediator variables simultaneously. Baron and Kenny (1986) stipulate that the independent variable should no longer have an effect on the dependent variable for perfect mediation to be achieved. A path analysis model is illustrated in Figure 4.

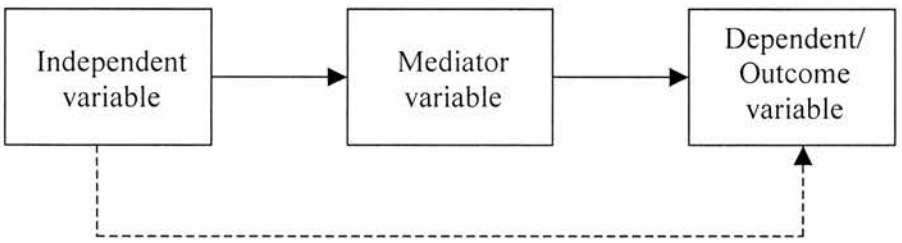

Figure 4: Example of a path analysis model. Complete arrows indicate a significant pathway, whereas dashed arrows indicate a non-significant pathway[25]

The mediator variable for the current hypothesised model is EMS and the independent variable is parental bonding. Suicidal behaviour is dependent on these two variables; directly dependent on EMS, which is influenced by parental bonding, and indirectly influenced by parental bonding, via the effect of EMS. Therefore, the hypothesised path analysis model of the current study is illustrated in Figure 5.

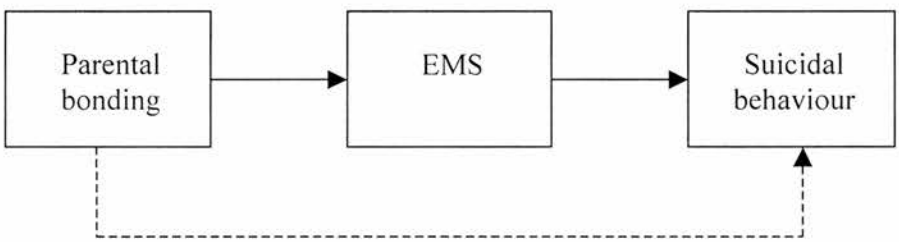

Figure 5: General path analysis model of the current study

The first stipulation by Baron and Kenny (1986), that all variables in the model must be intercorrelated, led to the proposition of the following mediational models: parental bonding was analysed according to parental care and parental control; EMS were entered into the model based on overall average EMS scores, and further analyses of 2 individual schemas (social isolation and defectiveness/shame), which were both correlated with parental bonding and suicidal behaviour; and suicidal behaviour was entered into the model only via risk of repetition.

[25] Complete arrows will indicate significant pathway and dashed arrows will indicate non-significant pathways for the remainder of the chapter.

Model 1: Analysis of the Mediating Effect of EMS on Parental Care/ Control and Risk of Repetition

Firstly, a mediational effect was analysed between EMS[26], parental care/ control and risk of repetition. EMS[27] was regressed onto parental care and onto parental control. According to Baron and Kenny (1986), the standardised co-efficient must indicate that the independent variable (parental care and control) significantly affects the mediator variable. Beta weights revealed that the relationships between parental care and EMS (β = -0.284; p = 0.02), and parental control and EMS (β = 0.472; p = 0.000) were significant.

Next, risk of repetition was regressed onto parental care and control. At this node, the independent variable (parental care and control) must significantly affect the dependent variable (risk of repetition). This was also significantly demonstrated for parental care (β = -0.271; p = 0.036), and parental control (β = 0.308; p = 0.017). Similarly, a significant Beta coefficient was indicated risk of repetition was regressed onto EMS[28] (β = 0.378; p = 0.003).

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[26] Overall average YSQ score
[27] Overall average YSQ score
[28] Overall average YSQ score

Finally, to test for mediational effects, risk of repetition was regressed onto parental care and EMS simultaneously, and onto parental control and EMS simultaneously. At this point, the mediator variable (EMS) must significantly affect the dependent variable (risk of repetition) and perfect mediation is indicated if the independent variable (parental care/ control) no longer has an effect. This was found to be the case with EMS remaining significant in the equation (β= 0.327; p = 0.01), whilst parental care (β = -0.178; p = 0.162) lost significance. Similarly EMS remained significant in the equation (β = 0.299; p = 0.034) while parental control became non-significant (β = 0.167; p = 0.231). This is illustrated in Figures 6 and 7.

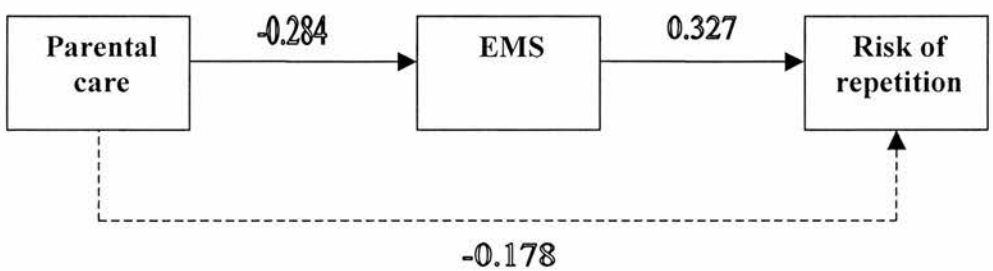

Figure 6: Beta coefficients of the pathways between parental care, EMS and risk of repetition

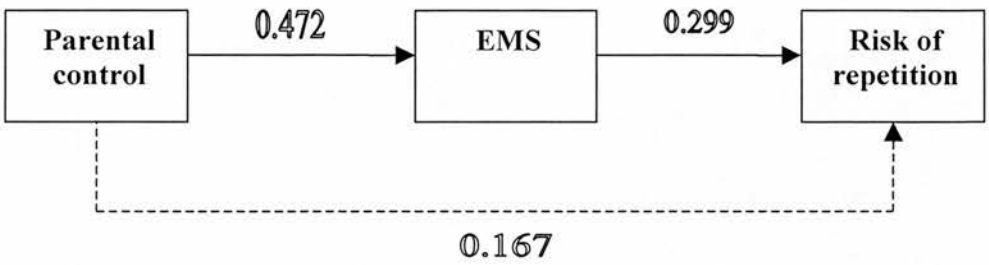

Figure 7: Beta coefficients of the pathways between parental control, EMS and risk of repetition

Model 2: Analysis of the Mediating Effect of Social Alienation schema on Parental Care/ Control and Risk of Repetition

A second path analysis was conducted to examine the mediational effect of the Social Alienation schema on the relationship between parental care/ control and risk of repetition. Following Baron and Kenny's (1986) steps of path analysis, Social Alienation was regressed onto parental care and parental control and was found to have a significant effect for both parental care and control; beta coefficients of -0.258 ($p = 0.04$) and 0.356 ($p = 0.005$) respectively. Secondly, risk of repetition was regressed onto parental care and control. Significant beta coefficients were again found for care and control; $\beta = -0.271$; $p = 0.036$, and $\beta = 0.308$; $p = 0.017$ respectively. Significant Beta coefficient was also demonstrated when risk of repetition was regressed onto Social Alienation; $\beta = 0.513$; $p = 0.000$. Finally, risk of repetition was regressed onto parental care/ control and Social Alienation simultaneously. While Social Alienation remained significant in the equation ($\beta=$

0.474; p = 0.000), parental care (β = -0.148; p = 0.206) lost significance. Similarly Social Alienation remained significant in the equation (β = 0.462; p = 0.000) while parental control became non-significant (β = 0.144; p = 0.237). This is illustrated in Figures 8 and 9.

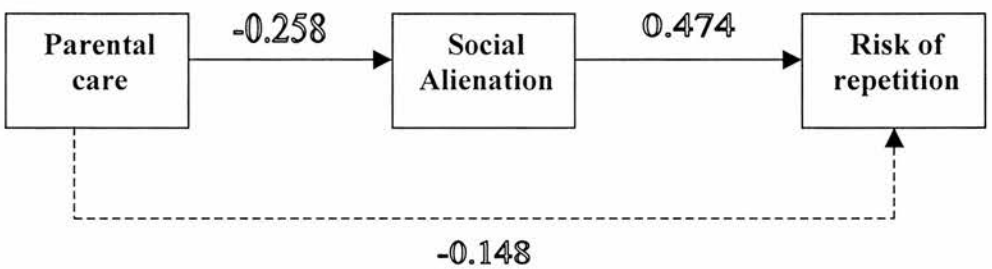

Figure 8: Beta coefficients of the pathways between parental care, Social Alienation and risk of repetition

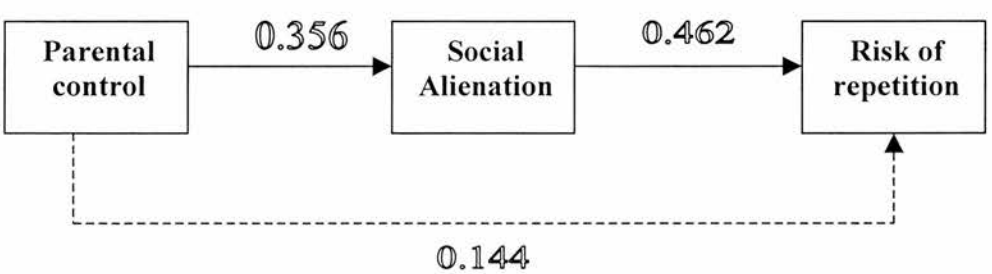

Figure 9: Beta coefficients of the pathways between parental control, Social Alienation and risk of repetition

Model 3: Analysis of the Mediating Effect of Defectiveness/ Shame schema on Parental Care/ Control and Risk of Repetition

A final path analysis was conducted to examine the mediational effect of Defectiveness/ Shame on the relationship between parental care/ control and risk of repetition. In doing so, Defectiveness/ Shame was regressed onto parental care and onto parental control. While a significant pathways was revealed between parental control and Defectiveness/ Shame was revealed ($\beta = 0.321$; $p = 0.012$), the pathway between parental care and Defectiveness/Shame was not significant ($\beta = - 0.241$; $p = 0.100$), and was therefore not considered for further path analysis, as per Baron and Kenny (1986) path analysis stipulations. Next, risk of repetition was regressed onto parental control, and again, a significant pathway was indicated ($\beta = 0.308$; $p = 0.017$). Finally, risk of repetition was simultaneously regressed onto Parental Control and Defectiveness/ Shame and whilst the relationship between Defectiveness/ Shame held significance in the equation ($\beta = 0.262$; $p = 0.046$), Parental Control was no longer significant ($\beta = 0.224$; $p = 0.087$). This mediational effect is illustrated in Figures 10 and 11.

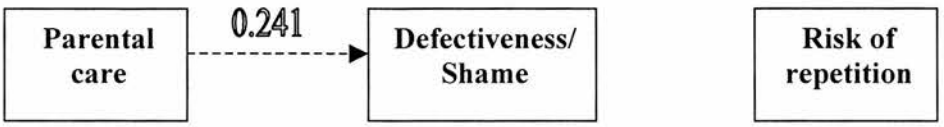

Figure 10: Beta coefficients of the pathways between parental care and Defectiveness/ Shame

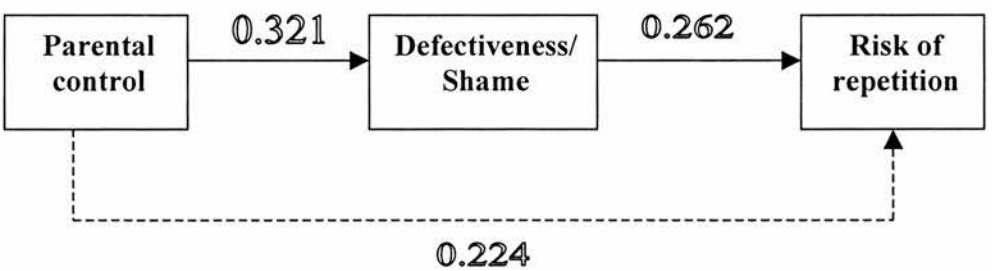

Figure 11: Beta coefficients of the pathways between parental control, Defectiveness/ Shame, and risk of repetition

3.5 SUMMARY OF RESULTS

Significant differences were found between the three groups (suicidal behaviour group, primary care mental health group and non-clinical comparison group) on scores for the five main variables. Measures of anxiety, depression and dysfunctional schemas differed significantly in the predicted direction, with the suicidal behaviour group indicating greater levels of anxiety, depression and dysfunctional schemas than the primary care mental health group and the non-clinical comparison group. The primary care mental health group indicated greater levels of anxiety, depression and dysfunctional schemas compared with the non-clinical comparison group. In terms of parental bonding, the predicted pattern was not found; significantly lower levels of parental care were demonstrated in the suicidal behaviour group, compared with the non-clinical comparison group, but the suicidal behaviour group did not significantly differ from the clinical comparison group on scores of parental care. Similarly, although the suicidal behaviour group indicated significantly higher levels of parental control than the non-clinical comparison group, there was no significant difference between the suicidal behaviour group and primary care mental health group on the measure of parental control. Thus, hypothesis 1 receives partial[29] support: the three groups significantly differed on all 5 key measures, but the predicted direction was found only for measures of anxiety, depression and EMS.

Within the suicidal behaviour group, as predicted a negative correlation was found between parental care and risk of repetition, with a small effect size. No significant correlation, however, was found between parental care and suicidal intent. A

[29] Partial support is defined as support of some, but not all sub-hypotheses.

significant positive correlation was found between parental control and risk of repetition, with a medium effect size. No significant correlation was indicated between parental control and suicidal intent. Therefore, hypothesis 2 received partial support; the predicted significant associations were found only with risk of repetition and not with suicidal intent.

As predicted, a significant positive association (medium effect) was found between EMS and risk of repetition. No significant association was indicated between EMS and suicidal intent. Further, EMS of Social Alienation, Defectiveness/ Shame, Vulnerability to Harm, Subjugation, Emotional Inhibition, Entitlement and Insufficient Self-control were all significantly associated with risk of repetition. Hypothesis 3, therefore, is partially supported with the sub-hypothesis involving risk of repetition being supported, but the sub-hypothesis involving suicidal intent not being supported.

With respect to mediational models, the general model of EMS mediating the relationships between both parental care and risk of repetition, and parental control and risk of repetition was fully supported. Further, the Social Alienation schema was found to fully mediate the relationships between both parental care and risk of repetition, and parental control and risk of repetition. The schema of Defectiveness/ Shame was found to mediate the relationship between parental control and risk of repetition. It was not, however, found to mediate the relationship between parental care and risk of repetition. Hypothesis 4 has therefore received support as a general

mediational model was indicated. Further, two specific mediational models were indicated.

CHAPTER 4:

DISCUSSION

In this chapter, the results of the current study will be summarised and then explored with reference to the previous literature, in terms of each of the hypotheses. The implications of the results will then be discussed in terms of our understanding of suicidal behaviour with regard to prevention and treatment. Finally, the methodological limitations of the study will be discussed and future directions for the research indicated.

4.1 Summary of Research

Suicidal behaviour is a frequently occurring presentation in adult admissions to Accident and Emergency wards. The relationship between suicidal behaviour and subsequent suicide results in a need to better understand this population. Suicidal intent and risk of repeating the suicidal behaviour are both commonly investigated in those presenting with suicidal behaviour, as they help provide a clinical understanding of the current behaviour. Further, associations have been made between suicidal intent and risk of repetition, which in turn has been associated with suicide.

Parental bonding in this population has been the focus of research, as a means of understanding suicidal behaviour from a developmental perspective. Some studies have indicated lower levels of parental care and higher levels of parental control in this population, however, the methodology and design of the studies render this area of research inconclusive.

According to cognitive therapy, it is accepted that cognitions play an important part in psychological disorders and several studies (Whisman & Kwon, 1992; Whisman & McGarvey, 1995) have found a mediating role of cognitions in the relationship between parental bonding and psychopathology. Young (1990) highlighted the limitations of the clinical theory of cognitive therapy, particularly with chronic psychological difficulties or personality disorders, and emphasised the importance of schemas in psychological presentations. A small number of studies have investigated the relationship between schemas and psychopathology, and there is some evidence for EMS providing a mediating role between parental bonding and later psychopathology (Leung *et al,* 2000; Murray *et al,* 2000). EMS have yet to be investigated in a suicidal behaviour group, and further, a mediational model, examining the role of schemas as mediating the relationship between parental bonding and subsequent difficulties, had not yet been investigated in this group. Young (1990) proposed that EMS may be of particular importance in chronic and severe presentations, and therefore, because suicidal behaviours are frequently repeated, schemas may be of particular interest with this group.

Therefore, the aim of the current study was to examine the role of parental bonding and schemas in suicidal behaviour. The differences between this population and a clinical mental health group and non-clinical comparison group were examined for variables of parental bonding (both care and control), schemas and anxiety/ depression. Further, within the suicidal behaviour group, the mediating role of

schemas was investigated in the relationship between parental bonding and two presenting features of suicidal behaviour; suicidal intent and risk of repetition.

Findings indicated a significant difference between the three groups on measures of parental bonding, EMS, anxiety and depression. However, the two clinical groups only significantly differed in terms of EMS, anxiety and depression measures, and not by parental care or control. Within the suicidal behaviour group, parental bonding (both care and control) was associated with risk of repetition, but not with suicidal intent. Levels of EMS were significantly associated with risk of repetition, but again, not with intent. Three mediational models were tested and support for the mediating role of schemas (an overall average schema score and social alienation) between the relationship between parental care and risk of repetition was indicated, and the mediating role of schemas (an overall average schema score, social alienation and defectiveness/ shame) between the relationship between parental control and risk of repetition was demonstrated.

4.2 Further discussion and exploration of research findings

4.2.1 Hypothesis 1 – Between group analyses

Research thus far has indicated that anomalous parental bonding styles are more prevalent in individuals experiencing some form of psychological difficulty, such as anxiety, depression, eating disorders, than non-clinical comparative samples (see section 1.3.4.3). In particular, lower levels of parental care, and higher levels of parental control[30] have been indicated in a range of clinical groups, when compared with non-clinical samples (Calam *et al,* 1990; Parker *et al,* 1987; Silove, 1986). Therefore, the finding that the three groups (suicidal behaviour group, clinical mental health group and non-clinical comparison group) significantly differed on measures of both parental care and parental control was expected.

However, while it was hypothesised that the suicidal behaviour group would present with lower levels of parental care and higher levels of parental control than both of the comparison groups, the suicidal behaviour group did not significantly differ from the clinical mental health group in terms of parental care or control. Most of the previous studies into parental bonding in suicidal behaviour groups, which have found significantly lower levels of parental care, and higher levels of parental control, have used a non-clinical sample as the comparison group (Diamond *et al,* 2005; Goldney, 1985). Adam *et al* (1994) examined parental bonding in two psychiatric groups, one with suicidal behaviour and one without, and found lower

[30] Although this finding is inconsistent across the literature

levels of parental care and higher levels of parental control in the suicidal behaviour group. This study, however, was conducted with adolescents as young as 13 years old, who are still regarded as being strongly under parental influence and have not experienced all of the developmental years which the PBI measures. Therefore, this sample may present as a different population from adult suicidal behaviour groups. Similarly, Yamaguchi *et al* (2000) examined parental bonding in a group of eating disorder patients and divided their eating disorder sample into suicidal behaviour and non-suicidal behaviour. However, their suicidal behaviour group was determined by past 'suicidal attempts' but it is unclear if this included deliberate self-harm and it appears that this information was gathered solely by self report. The current study appears to be the first to compare parental bonding in an adult sample, currently presenting with suicidal behaviour, with another clinical mental health group.

The lack of significant differences between the groups on measures of parental care and control suggests that while anomalous parenting may provide a vulnerability to a range of psychological difficulties, another factor may be involved in determining the way this later distress is conveyed. It indicates that while developmental factors are important in understanding current psychological distress, other factors may be crucial in this relationship and highlights the need to examine the processes involved in the relationship between anomalous parenting and later distress (also suggested by Silove *et al,* 1987). This supports the importance of examining mediational models in the relationship between parental bonding and later distress, which shall be further discussed in relation to the fourth hypothesis, in section 4.2.4.

Further, the wide range of psychological difficulties which have been associated with low levels of parental care and high levels of parental control, e.g. depression, anxiety, schizophrenia, addictions (as described in section 1.3.4.3), suggests a general vulnerability of anomalous parenting to later distress. If this general vulnerability notion holds true, then this aids of our understanding of the results indicating a lack of significant differences in measures of parental bonding between the two clinical groups.

Similar to the current study, Marchetto (2006) found no significant differences between a sample of Borderline Personality Disorder patients who were repetitive skin-cutters, and those who were not, on measures of parental care and parental control. Although those with any suicidal intent were excluded from the study, differentiating them from the current suicidal behaviour group, the similar lack of significant differences between the groups on measures of parental bonding suggest the need to examine a third variable in the model.

The results of the current study did indicate significant differences between the three groups of measures of EMS, anxiety and depression, and that each of the three groups significantly differed from each other on each of these three measures, in the predicted direction. Higher levels of anxiety in the suicidal behaviour group, compared with both of the comparison groups was expected and found. This is consistent with Allgulander's (2000) summary of the studies looking at anxiety in suicidal behaviour:

> Pathological anxiety plays an important role in suicidal behaviour, independently and as a co-morbid symptom.... There is a risk for suicidal behaviour in anxiety disorders *per se*, demonstrated in severe cases of anxiety neurosis, panic disorder, social phobia, post-traumatic stress disorder, and obsessive-compulsive disorder. (Allgulander, 2002, p.187)

Similarly, the finding that levels of depression were higher in the suicidal behaviour group than either of the two comparison groups was expected. Within a sample of psychiatric patients, Mann *et al* (1999) found that subjective depressive feelings, hopelessness and severity of suicidal ideation were all significantly greater in those who engaged in suicidal behaviour than those who did not.

The finding that the suicidal behaviour group presented with higher levels of EMS than either of the two comparison groups, however, indicates that the suicidal behaviour group is more than just a group with increased levels of anxiety and depression. They present not only with higher levels of EMS, but several EMS were found in particular to distinguish the suicidal behaviour group from the clinical sample; Defectiveness/ Shame, Dependency, Self-sacrifice, Entitlement and Insufficient Self-control. This further emphasises the need to explore the role of EMS in the found relationship between parental bonding and suicidal behaviour, and indicate schemas which may be pertinent in differentiating those at risk of suicidal behaviour.

4.2.2 Hypothesis 2 – Within group analyses

Parental bonding and suicidal behaviour

It was expected that parental bonding, both care and control, would be associated with risk of repetition. It appears that no studies have thus far examined parental bonding in a suicidal behaviour group to examine its link to risk of repeating suicidal behaviour. Given that anomalous parenting has been indicated in suicidal behaviour populations (Goldney, 1985; Violato & Arato, 2004), it would make intuitive sense for this parenting to be more anomalous in those who were at increased risk of repeating the suicidal behaviour, as the impact of poor parenting style over the first sixteen years of life may have lead to a longstanding vulnerability to suicidal behaviour, rather than an isolated act. Several studies have indicated correlations between low levels of care and high levels of control with anxiety and depression symptomatology (Enns *et al,* 2002; Turgeon *et al,* 2002) and other measures of psychological distress appropriate for each population, e.g. eating disorders (Calam *et al,* 1990). In the suicidal behaviour group, levels of anxiety and depression, although of interest, were not the examined measures of distress. Instead, risk of repetition was measured as a means of examining levels of psychological distress specifically related to suicidal behaviour, and as such, it was expected that low levels of care and high levels of control would be associated with a key aspect of suicidal behaviour, such as risk of repetition, and this finding was indicated.

The used measure of risk of repetition includes the item 'anti-social personality,' which the presence of, indicates increased risk of repetition. Anomalous parenting

has been associated with poor social relationships and bonds in adulthood (Birtchnell, 1993; Parker *et al,* 1992) and may contribute to the current association between anomalous parental bonding and risk of repetition. In those indicating increased levels of anomalous parenting, the noted difficulty with relationships may impact on home circumstances and another factor related to risk of repetition is 'not living with a relative.' Similarly, problem alcohol use is an indictor of risk of repetition in the current study and has also been associated with poor parenting (Bernardi *et al*, 1989). Thus, the association between parental bonding and risk of repetition in the current study is consistent with previous studies.

Parental bonding was also expected to be associated with suicidal intent, with lower levels of care and higher levels of control hypothesised as being correlated with higher suicidal intent. This, however, was not indicated in the current study. There are several reasons why the expected correlation was not significantly found. Pierce (1977) found that method of self injury influenced scores on the Suicide Intent Scale and demonstrated that scores tended to be higher among patients who used methods other than self poisoning. He found a very significant difference between the self-poisoning group and other methods. More recently, Harriss *et al* (2005) found similarly lower levels of intent in those who self-poisoned compared to other methods. 94.9 per cent of the current sample had self-poisoned, suggesting that scores on the Intent scale may have been too low and lacking in range to be associated with parental bonding. The current sample were of lower levels of medical lethality. Several studies have indicated an association between low medical lethality and low levels of suicide intent (Haw *et al,* 2003; Kumar *et al*, 2006), which may

explain the lack of significant association. A significant correlation with suicidal intent may have been found in a sample presenting with more diverse and wide ranging methods of suicidal behaviours. In addition, the first question of the suicide intent scale, examines isolation and nearness to a telephone but this may be less valid in today's society in which mobile telephones have led to a decrease in chances of isolation. Despite these noted difficulties with the measurement of intent in the current sample, a lack of significant association between parental bonding and suicidal intent may still have been indicated in a wider ranging sample; whereas parental bonding is expected hold a consistent and enduring impact on a person, suicidal intent is understood to be more impulsive and time-oriented, with suicidal intent known to change after the event.

It could be hypothesised that the current findings of associations between low levels of parental care and risk of repetition, and high levels of parental control and risk of repetition are mere reflections of mood bias, resulting in a negative influence across responses. Although mood is understood to have an impact on memory recall, studies have indicated that retrospective measures of parental bonding, as measured by the PBI, remain stable across fluctuations of mood state (Gerslma *et al,* 1994; Plantes *et al,* 1988). Further, the objective nature of the risk of repetition scale prevents any mood participant mood bias. To minimise any potential for a mood bias, however, measures were not completed while participants were in distress, but when deemed stable by a member of the Liaison Psychiatric team.

4.2.3 Hypothesis 3

EMS and suicidal behaviour

While research into the impact of EMS on psychopathology is growing, no studies have thus far investigated the role of EMS in suicidal behaviour. The association between EMS and psychopathology has been indicated in other clinical populations; Waller *et al* (2001) found an association between EMS and bulimic symptomatology; Wellburn *et al* (2002) indicated significant correlations between EMS and levels of anxiety and depression in a psychiatric sample. Further, the importance of cognitive styles in suicidal behaviour has been indicated by previous studies which have highlighted the role of hopelessness thinking styles (MacLeod *et al,* 2005) and perfectionistic thinking styles (Hunter & O'Connor, 2003).

Therefore, the current finding that higher scores on the YSQ were significantly positively associated with increased risk of repetition is not surprising. Maladaptive schemas may impact on alcohol misuse, social relationships and response to psychological/ psychiatric treatment, all indicators of risk of repeating suicidal behaviour. Higher levels of EMS, however, were not significantly correlated with increased suicidal intent. This lack of association with suicidal intent supports the limitations of measuring suicidal intent in the current predominantly low level intent self-poisoning sample, indicated in section 4.2.2. Further, EMS are understood to be enduring and pervasive by character, unlike suicidal intent which is understood to be more fleeting and temporary.

Seven individual EMS were found to be significantly associated with risk of repetition: Social Alienation, Defectiveness/ Shame, Vulnerability to Harm, Subjugation, Emotional Inhibition, Entitlement and Insufficient Self-control. As no previous studies have examined schemas in suicidal behaviour, no specific EMS were hypothesised to be associated with suicidal behaviour. Social Alienation was the only EMS found to be correlated with risk of repetition with a large effect size. Social networks have been indicated as important in suicidal behaviour in a study by Hart *et al* (1988) who found that those with suicidal behaviour, when compared with a non-suicidal behaviour group, indicated impaired social networks. It can be understood that social alienation could lead to a sense of isolation, loneliness and perceived lack of support. This may relate to some of the reasons that those who have engaged in suicidal behaviour give for their behaviour, such as to gain attention from others and to impact on care from others (House *et al*, 1998; Melzter *et al*, 2002). Further, the Social Alienation schema may be related to some of the factors measured in the risk of repetition scale; anti-social personality, problem alcohol use (indicated as being related to poor social exclusion, Bushell *et al*, 2002; and to loneliness, Grunbaum *et al*, 2000), and not living with a relative. It is possible that Social Alienation and risk of repetition maintain each other, with Social Alienation impacting on risk of repetition as above, and the repetition of suicidal behaviour impacting on social isolation and relationships as this difficult to understand behaviour may alienate friends and family further. Social alienation shall be discussed further in section 4.2.4, which examines the role of Social Alienation in a mediational model.

Defectiveness/ Shame schema was also significantly associated to risk of repetition and can be understood as an enduring cognitive bias, which may be linked to a sense of hopelessness; a known characteristic of suicidal behaviour (MacLeod *et al,* 2005). Vulnerability to Harm was also significantly associated with risk of repetition and indicates a sense of helplessness which can be related to suicidal ideation and behaviour through a lack of belief that the current situation can improve. The schema of Subjugation was also significantly associated with risk of repetition. One reason for this may be that the detrimental impact of subjugating one's own needs for others', results in a lack of care and protection of self. The burnout of subjugation may result in a decrease in coping abilities and lead to suicidal behaviour as a means of coping in difficult situations. Emotional Inhibition was similarly significantly correlated with risk of repetition and can be explained in terms of the understanding of suicidal behaviour as a means of expressing emotions (House *et al,* 1998); in those emotionally inhibited, no other more adaptive outlet for emotions may be known or utilised. The schema of Entitlement was also found to be significantly associated with risk of repetition. As the Entitlement schema relates to a sense of grandiosity and lack of awareness of others, this may reflect a belief of one's right to choose their actions, and is coupled with a minimisation of or lack of insight into the wider effects of suicidal behaviour and its impact on other people aside from the self. Further, the lack of awareness of others which is at the core of this schema, may also relate to aspects of Social Alienation, such as social integration and understanding, which has already been indicated as important in suicidal behaviour. The final schema significantly correlated with risk of repetition was Insufficient Self-control. This finding can be understood in terms of the impulsivity commonly found in

suicidal behaviour. A study by Williams (1997) found that over 50 per cent of those who had recently engaged in suicidal behaviour reported that they did not think of it for more than an hour beforehand. Therefore, it makes sense for those lacking sufficient self-control to be at increased risk for repeating suicidal behaviour.

Although, as with measures of parental bonding, it is possible that responses on the YSQ could have been affected by current mood state at time of completion, this is unlikely given the characteristics of the measured variable; schemas are understood to be enduring, stable, pervasive and unconscious, therefore, by their very nature it would be expected that they would be stable over mood variations. As a precaution, measurements were not conducted in the immediate aftermath of the suicidal behaviour, when a higher emotional arousal may be expected, but once the participants were deemed as emotionally stable by Liaison Psychiatry.

4.2.4 Hypothesis 4

Mediational models

Thus far, no study has brought together the variables of parental bonding, schemas and suicidal behaviour. Given our theoretical understanding of psychological difficulties, it is no surprise that previous research which has looked at the role of EMS or core beliefs as mediating the relationship between parental bonding and psychopathology in anxiety/ depression samples, have found support for a mediational model (Harris & Curtin, 2002; Randolph & Dykman, 1998; Shah & Waller, 2000; Whisman & Kwon, 1992). The current study aimed to investigate the

possible structure between these variables in a group presenting with suicidal behaviour. Its main aim was to examine if EMS would act as a mediator in the relationship between parental bonding and suicidal behaviour, namely risk of repetition and suicidal intent.

The correlational findings discussed in sections 4.2.2 and 4.2.3, indicate the importance of parental bonding, both care and control, and EMS in suicidal behaviour, in particular, risk of repetition. Path analyses investigations highlighted that these relationships are not just two-stage processes, but that a three step understanding of the impact of parental bonding on suicidal behaviour is optimal.

EMS were found to mediate the relationship between parental care and risk of repetition, and parental control and risk of repetition. This highlights the indirect impact of early experiences on suicidal behaviour. Unlike several other studies in non-suicidal behaviour groups (Randolph & Dykman, 1998; Whisman & Kwon, 1992), in the current study both parental care and parental control were involved in significant mediational models. This finding suggests the importance of parental control in suicidal behaviour, although in the current study, no significant difference was found between the suicidal behaviour group and two comparison groups on a measure of parental control. It is therefore suggested that the importance of parental control is best understood in a multi-dimensional model which includes mediating factors.

The Social Alienation schema was found to mediate the relationship between parental care and risk of repetition, and parental control and risk of repetition. In studies which have looked at the role of EMS as mediator in the found relationship between parental bonding and anxiety/ depression, Social Alienation was not indicated as a significant mediator. This highlights its importance in this specific population. Levels of Social Alienation were not, however, found to significantly differ between the suicidal behaviour group and the two comparison groups in the current study. Social Alienation may not differentiate those with anxiety/ depression from those displaying suicidal behaviour, and therefore, may not be indicative of a risk factor for suicidal behaviour in general but needs to be understood as part of a broader model. This does emphasise, however, the importance of the 3 stage model of parental bonding, EMS and suicidal behaviour.

Within the suicidal behaviour group, however, Social Alienation does mediate the relationship between parental care/ control and risk of repeating suicidal behaviour, and therefore plays a key role in the presentation of suicidal behaviour. It is possible that actual low care and high control may result in actual social alienation and isolation in childhood, through neglect and restriction of activities. This may then negatively impact on a child's social skills, thus maintaining the social alienation. In turn, this continued isolation may increase the risk of suicidal behaviour and of repetition of suicidal behaviour, through means described in section 4.2.3. It is also possible that perception of low levels of parental care leads to a belief that one is fundamentally different from others; the premise of the Social Alienation schema. This in turn leads to a vulnerability of repeating suicidal behaviour as this theme

endures and strengthens, increasing isolation and therefore, according to cognitive theories of depression, maintaining the depressive cycle. Aspects of risk of repetition, such as anti-social personality, problem alcohol use and not living with a relative, may be directly related to Social Alienation and highlight the reciprocal relationships involved in Social Alienation. Williams and Pollock (2001) suggest that suicidal behaviour occurs upon three stipulations, one of which is that there are no identified rescue factors for distress, such as social support. Further, having no confidante has been indicated as increasing the risk of repeating suicidal behaviour (Scott *et al*, 1997). High levels of parental control may impact on a child's autonomy and skill in making and sustaining relationships, which may lead to the development of a Social Alienation schema, which, as through the pathways suggested, lead to an increase risk of repeating the suicidal behaviour. High levels of control/ overprotection may impair the ability to self regulate; it makes separation and autonomy more difficult and therefore at time of severe struggles of individuation, when isolated, suicidal behaviour risk is increased. Social Alienation acting as a mediating factor in the relationship between parental bonding and risk of repetition also links with Bowlby's (1977) views on attachment, in which he states that the propensity to form and maintain social relationships are crucial in the association between attachment and subsequent psychological well-being.

The Defectiveness/ Shame schema was also included in path analysis due to its correlation with both parental care/ control and risk of repetition. In previous studies this schema has been indicated as offering a mediational role in the relationship between parental care/ control and depressive symptoms (Harris & Curtin, 2002),

and between parental care and maternal control, and eating disorder symptoms (Turner *et al,* 2005). In the current study, Defectiveness/ Shame schema was found to mediate only the relationship between parental control and risk of repetition, and not parental care and risk of repetition.

During the first step of path analysis examining the role of Defectiveness/ Shame in the relationship between parental care and risk of repetition, a significant pathway between parental care and Defectiveness/ Shame was not indicated, and therefore, the path analysis not continued, concluding that Defectiveness/ Shame was not found to mediate the relationship between parental care and risk of repetition. Given the mediating role of Defectiveness/ Shame demonstrated in the relationship between parental care and eating disorder symptoms (Turner *et al,* 2005) and between parental care and depressive symptomatology (Harris & Curtin, 2002), this finding was unexpected. This highlights that there are more complexities in the suicidal behaviour group than just increased levels of depression. Low levels of care may result in a belief that one is unworthy and unloveable, but correlations between parental care and risk of repetition were found to be only of a small effect in the first instance. When all three variables were entered into the equation, these small effects became non-significant. Defectiveness/ Shame may be important in the relationship between parental bonding and suicidal behaviour, but through a different pathway.

Defectiveness/ Shame was found to mediate the relationship between parental control and risk of repetition. High levels of parental control in childhood may lead to a belief that one is inadequate and incapable of making decisions, and of living a

full and independent life. It is suggested that this in turn, influences the risk of repeating the suicidal behaviour through the enduring nature of this schema and its known relationship with depression (Harris & Curtin, 2002). Defectiveness / Shame schema may also impact on some of the factors associated with risk of repetition; this belief may result in the use of alcohol as a means of coping with one's inadequacies and problem alcohol use is associated with risk of repetition; viewing one's self as defective may impact on confidence for forming and maintaining social relationships and anti-social personality and not living with a relative are measures of increased risk of repetition.

It is of interest that both of the EMS which have been identified as offered a mediational role in the relationship between parental bonding and risk of repetition, are from the same domain; Disconnection and Rejection. It is clear that this schema domain plays an important role in suicidal behaviour.

4.3 Clinical Implications of the Findings

The results of the current study highlight the importance of EMS in suicidal behaviour. Awareness of, and practice in, Schema therapy is growing in clinical mental health settings, and the correlations and subsequent mediational models emphasise the importance of schemas in assessment, formulation and treatment of suicidal behaviour. This suicidal behaviour group are seen initially by Liaison Psychiatry at an Accident & Emergency setting, where an emphasis is placed upon immediate precursors to the event and risk of repetition. It appears, however, that early experiences play a key part in the risk of repeating the behaviour and should be further investigated. In particular, because this relationship is mediated by EMS, these should not be omitted at assessment, follow-up and treatment planning.

As Social Alienation was found to be pertinent in the relationship between parental bonding and risk of repetition, it could be suggested that this should be the focus of clinical intervention. This may be done through the techniques aligned to the schema of Social Alienation in Schema Therapy; through challenging core beliefs and automatic thoughts related to social isolation in cognitive therapy; through exposure to social situations in behaviour therapy; through the management of relationships in Interpersonal therapy; through social skills training; or through other voluntary or social support services. Without tackling the underlying EMS, difficulties experienced in early life may continue to impact on current symptomatology and risk of repeating suicidal behaviour.

Defectiveness/ Shame was also found to mediate the relationship between parental bonding and suicidal behaviour, via the pathway between parental control and risk of repetition. An increased awareness in therapy of this schema and subsequent treatment of, may lead to a decrease in its presence, therefore, weakening any relationship between parental control and risk of repeating the suicidal behaviour. Again, Schema therapy would be recommended, as would CBT for self-esteem and related cognitive behavioural framework of difficulties.

A better understanding of this population and the risks of repeating the behaviour, if applied appropriately, may prevent repeated suicidal behaviour and even suicide. The study emphasises that suicidal behaviour is complex and multi-factorial.

4.4 Methodological Limitations

A few possible limitations of the current design shall now be discussed.

The sampling of the suicidal behaviour group has several strengths; it consists of a consecutive series of suicidal behaviour admissions; a high response rate was found indicating increased representation of this population. From a qualitative stance, it appeared that the majority of those who refused to participate did so not because of unwillingness to engage, or because of an increase in distress, but because of external factors such as family waiting to take them home.

Despite these strengths of the sample, certain weaknesses are also noted. Within the suicidal behaviour group, all participants presented at a short stay ward, usually for overnight observation and/ or medical attention. These short-term admissions indicate the general low medical lethality of this group. Low medical lethality has been related to lower levels of suicide intent (Haw *et al,* 2003; Kumar *et al*, 2006) and it is possible that a study conducted with those of increased medical lethality may present differently.

It could be suggested that as most of the current suicidal behaviour sample presented with self-poisoning, this impacts on this sample's representation of suicidal behaviour presentation. However, studies indicate that self-poisoning is the most common form of suicidal behaviour which presents as Accident and Emergency wards (Hawton *et al*, 2000; Schmidtke *et al,* 1996). Further regarding how

representative this sample is of suicidal behaviour, it has been indicated that in many hospitals, almost half who attend for suicidal behaviour self discharge against medical advice from Accident and Emergency without specialist assessment (Kapur *et al*, 1998). Several factors have been indicated as increasing the likelihood for self-discharge: being male, taking illegal drugs and/ or alcohol and attendance outwith office hours (Bennewith *et al*, 2005). Other factors included young age (<45 yrs), no previous attendance for suicidal behaviour and not being admitted as an inpatient to hospital. A local audit in the current study setting suggested that 26 per cent of those attending A&E following suicidal behaviour, over a 24 month period, did not receive psychosocial assessment. The reasons for this were found to be; no reason indicated (62 per cent), refusal of assessment (17.6 per cent), discharged against medical advice (12.9 per cent), absconded (3.9 per cent), admitted to medical ward (2.8 per cent) and died as result of the suicidal behaviour (<0.1 per cent; Mei-Ling Ball & Kane, 2006). Therefore, there is a potential for this sub-sample to have been excluded by default from the current study.

The study also benefits from having two comparison groups. This aids our understanding of suicidal behaviour populations in contrast to not only non-clinical participants, but to clinical mental health participants, presenting mainly with anxiety/ depression. As the comparison groups' datasets were collected prior to the current study design, previous suicidal behaviour history was not noted in those participants. Although this unaccountability is worth noting, current suicidal behaviour, not past suicidal behaviour, is the focus of the current study.

All of the measures used are commonly utilised in clinical and research practice, and their validity and reliability have been indicated in chapter 1. Some minor critiques of the measures, however, are noted. The Risk of Repetition Scale includes "anti-social personality" as a risk factor. This factor is difficult to assess in the current study, which was based on a short semi-structured interview, and was only identified in two participants. This impacts on the potential range and variations in scores. Although the measure includes alcohol use as a risk factor, it does not include drug misuse, which in the current geographical setting is known to be prevalent.

Mediation was examined through simple regression path analysis. Although this technique can evaluate casual hypotheses, it cannot establish the direction of causality. Mackinnon *et al* (2002) have noted further cautions with this technique with regards to its low power and risk of Type 1 error.

Levels of both anxiety and depression were found to be higher in the suicidal behaviour group than in the two comparison groups. Neither anxiety nor depression, however, were analysed as a covariance factor in the study as this was not an aim of the study. It may have had important implications on the results however and so future studies may wish to explore this further.

4.5 Directions for Future Research

Given the cross-sectional design employed, and the measurement of all variables at one point in time, inferences about causality should not be made. Although the path analyses indicated a causal sequence of events, further examination into the actual temporal chain of events are still necessary. To aid this, a prospective longitudinal study would better explore the nature of the underlying causal processes in the presentation of suicidal behaviour.

It cannot be assumed that the variables assessed in the current study are the only relevant ones in such a model. It is likely that other variables are important in understanding suicidal behaviour and Baron and Kenny (1986) suggest that if the beta coefficient between the independent and dependent variables have not been completely reduced to zero after the mediating variable has been controlled for, as in each of the supported mediational models, then multiple mediating variables are likely to be involved. As Social Alienation appears to be prominent in our understanding of suicidal behaviour, other social constructs may be of interest, such as social competency, self-esteem, interpersonal skills, social problem solving. Use of the long-form YSQ, may indicate other EMS as potential mediating factors.

Similarly, while parental bonding has been indicated as associated with suicidal behaviour, it is only one aspect of early experiences, and future research may include other elements of early life adversities, such as abuse or parental loss.

Moderator factors and their potential influence on suicidal behaviour were not included in the current study and may be addressed in future research. Potential moderators include; life events and stresses, financial crises, relationship break-up, each of which were apparent at semi-structured interview. Life events have been associated with suicidal behaviour (Meltzer *et al,* 2002) and examining its impact on the variables of parental bonding, EMS and risk of repetition may be of interest. It is possible that life events emphasise or activate the Social Alienation schema, thereby increasing the likelihood of repeating suicidal behaviour. It is also possible that the schemas of Social Alienation and Defectiveness/ Shame impact on life events, e.g. poor relationships resulting in divorce. Quality of current relationships may also be considered as offering a moderating role in suicidal behaviour and links of theories of parental bonding and schemas. Gittleman *et al* (1998) found current positive attachments/ relationships to moderate the relationship between parental bonding and mental health. Similarly, social support as a moderator may provide further understanding of the complexities of suicidal behaviour groups, and this factor has already been associated with suicidal behaviour (Meltzer *et al,* 2002).

Given that the suicidal behaviour construct of risk of repetition appeared more prominent in the model, than suicidal intent, it would be of interest to examine risk of repeating the behaviour in more detail. Longitudinal studies would allow this follow-up, and studies involving treatment efficacy, in particular schema therapy, would be of interest. Better understanding of the risks of repeating suicidal behaviour could have strong implications for health promotion, risk prevention work.

4.6 Summary and conclusions

In conclusion, the results of the current study suggest that both parental bonding and EMS play an important role in our understanding of suicidal behaviour. In particular, both low levels of parental care and high levels of parental control have been associated with risk of repeating suicidal behaviour. Further, EMS have also been associated with suicidal behaviour, in terms of risk of repetition.

In addition, a mediational model has been supported which highlights the mediating role of EMS in the relationship between parental care/ control and risk of repetition. In particular, Social Alienation schema has been indicated as providing a mediating role in the above relationship, indicating the importance of beliefs and cognitions relating to social competence, worth and integration in suicidal behaviour. Defectiveness/ Shame was also found to offer a mediating role in the relationship between parental control and risk of repetition, again, increasing not only our theoretical understanding of suicidal behaviour, but potentially aiding clinical prevention and treatment. However, caution must be indicated regarding causality and further studies may involve longitudinal designs, and investigate other mediating and moderating variables to broaden our understanding of suicidal behaviour.

CHAPTER 5:

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APPENDICES

APPENDIX 1:

LETTER OF ETHICAL APPROVAL

NHS Fife | NHS Forth Valley | NHS Tayside

Fife, Forth Valley & Tayside Research Ethics Service

Tayside Committee on Medical Research Ethics B
Research Ethics Office
Level 9
Ninewells Hospital & Medical School
DUNDEE
DD1 9SY

Miss Rosanna Dale
Trainee Clinical Psychologist
NHS Tayside
7 Dudhope Tce.
DUNDEE
DD3 6HG

Date: 03 April 2007
Your Ref:
Our Ref: FB/**07S1402/21**
Enquiries to: Ms Lorraine Lynch
Extension: Ninewells extension 35598
Direct Line: 01382 425598
Email: Lorraine.lynch@nhs.net

Dear Miss Dale

Full title of study: **The role of perceived parental bonding and early maladpative schemas in suicidal behaviour.**

REC reference number: **07/S1402/21**

Thank you for your recent communication, which was received on 29 March 2007. You included the following document:

Document	Version	Date
Participant Information Sheet	2	27 March 2007

I am pleased to re-affirm the favourable opinion on behalf of the Committee.

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees (July 2001) and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

07/S1402/21	**Please quote this number on all correspondence**

Yours sincerely

Lorraine Lynch
REC Co-ordinator

Copy to: The University of Edinburgh, Department of Clinical Psychology
NHS Tayside R&D office

POSITIVE ABOUT DISABLED PEOPLE

APPENDIX 2:

PARENTAL BONDING INSTRUMENT – SHORT FORM

THE PARENTAL BONDING INSTRUMENT (PBI) – MOTHER

For each item, please underline the alternative that best describes how you remember your mother* in the first 16 years of your life.
*Or the individual who you regarded in that role (e.g., grandmother, aunt, step-mother, etc.).

She did not talk with me very much
Strongly agree Agree Disagree Strongly disagree

She was affectionate to me
Strongly agree Agree Disagree Strongly disagree

She appeared to understand my problems and worries
Strongly agree Agree Disagree Strongly disagree

She did not help me as much as I needed
Strongly agree Agree Disagree Strongly disagree

She did not understand what I needed and wanted
Strongly agree Agree Disagree Strongly disagree

She liked me to make my own decisions
Strongly agree Agree Disagree Strongly disagree

She let me decide things for myself
Strongly agree Agree Disagree Strongly disagree

She tried to control everything I did
Strongly agree Agree Disagree Strongly disagree

She tended to baby me
Strongly agree Agree Disagree Strongly disagree

She was overprotective
Strongly agree Agree Disagree Strongly disagree

THE PARENTAL BONDING INSTRUMENT (PBI) – FATHER

For each item, please underline the alternative that best describes how you remember your father* in the first 16 years of your life.
*Or the individual who you regarded in that role (e.g., grandfather, uncle, step-father, etc.).

He did not talk with me very much
Strongly agree Agree Disagree Strongly disagree

He was affectionate to me
Strongly agree Agree Disagree Strongly disagree

He appeared to understand my problems and worries
Strongly agree Agree Disagree Strongly disagree

He did not help me as much as I needed
Strongly agree Agree Disagree Strongly disagree

He did not understand what I needed and wanted
Strongly agree Agree Disagree Strongly disagree

He liked me to make my own decisions
Strongly agree Agree Disagree Strongly disagree

He let me decide things for myself
Strongly agree Agree Disagree Strongly disagree

He tried to control everything I did
Strongly agree Agree Disagree Strongly disagree

He tended to baby me
Strongly agree Agree Disagree Strongly disagree

He was overprotective
Strongly agree Agree Disagree Strongly disagree

APPENDIX 3:

YOUNG SCHEMA QUESTIONNAIRE – SHORT FORM

YSQ - S2

Initials _____ Date_____

INSTRUCTIONS:

Listed below are statements that a person might use to describe himself or herself. Please read each statement and decide how well it describes you. When there you are not sure, base your answer on what you emotionally **feel**, not on what you **think** to be true. Choose the **highest rating from 1 to 6** that describes you and write the number in the space before the statement.

RATING SCALE:

1 = Completely untrue of me

2 = Mostly untrue of me

3 = Slightly more true than untrue

4 = Moderately true of me

5 = Mostly true of me

6 = Describes me perfectly

1. _____ Most of the time, I haven't had someone to nurture me, share him/herself with me, or care deeply about everything that happens to me.

2. _____ In general, people have not been there to give me warmth, holding, and affection.

3. _____ For much of my life, I haven't felt that I am special to someone.

4. _____ For the most part, I have not had someone who really listens to me, understands me, or is tuned into my true needs and feelings.

5. _____ I have rarely had a strong person to give me sound advice or direction when I'm not sure what to do.

6. _____ I find myself clinging to people I'm close to, because I'm afraid they'll leave me.

7._____I need other people so much that I worry about losing them.

8. _____ I worry that people I feel close to will leave me or abandon me.

9. _____ When I feel someone I care for pulling away from me, I get desperate.

10. _____ Sometimes I am so worried about people leaving me that I drive them away.

11. _____ I feel that people will take advantage of me.

12._____I feel that I cannot let my guard down in the presence of other people, or else they will intentionally hurt me.

13._____It is only a matter of time before someone betrays me.

14. _____ I am quite suspicious of other people's motives.

15. _____ I'm usually on the lookout for people's ulterior motives.

16. _____ I don't fit in.

17. _____ I'm fundamentally different from other people.

18. _____ I don't belong; I'm a loner.

19. _____ I feel alienated from other people.

20. _____ I always feel on the outside of groups.

21. _____ No man/woman I desire could love me one he/she saw my defects.

22. _____ No one I desire would want to stay close to me if he/she knew the real me.

23. _____ I'm unworthy of the love, attention, and respect of others.

24. _____ I feel that I'm not lovable.

25. _____ I am too unacceptable in very basic ways to reveal myself to other people.

26. _____ Almost nothing I do at work (or school) is as good as other people can do.

27. _____ I'm incompetent when it comes to achievement.

28. _____ Most other people are more capable than I am in areas of work and achievement.

29. _____ I'm not as talented as most people are at their work.

30. _____ I'm not as intelligent as most people when it comes to work (or school).

31. _____ I do not feel capable of getting by on my own in everyday life.

32. _____ I think of myself as a dependent person, when it comes to everyday functioning.

33. _____ I lack common sense.

34. _____ My judgment cannot be relied upon in everyday situations.

35. _____ I don't feel confident about my ability to solve everyday problems that come up.

36. _____ I can't seem to escape the feeling that something bad is about to happen.

37. _____ I feel that a disaster (natural, criminal, financial, or medical) could strike at any moment.

38. _____ I worry about being attacked.

39. _____ I worry that I'll lose all my money and become destitute.

40. _____ I worry that I'm developing a serious illness, even though nothing serious has been diagnosed by a physician.

41. _____I have not been able to separate myself from my parent(s), the way other people my age seem to.

42. _____ My parent(s) and I tend to be overinvolved in each other's lives and problems.

43. _____ It is very difficult for my parent(s) and me to keep intimate details from each other, without feeling betrayed or guilty.

44. _____ I often feel as if my parent(s) are living through me--I don't have a life of my own.

45. _____I often feel that I do not have a separate identity from my parent(s) or partner.

46. _____ I think that if I do what I want, I'm only asking for trouble.

47. _____ I feel that I have no choice but to give in to other people's wishes, or else they will retaliate or reject me in some way.

48. _____ In relationships, I let the other person have the upper hand.

49. _____ I've always let others make choices for me, so I really don't know what I want for myself.

50. _____ I have a lot of trouble demanding that my rights be respected and that my feelings be taken into account.

51. _____ I'm the one who usually ends up taking care of the people I'm close to.

52. _____ I am a good person because I think of others more than of myself.

53. _____ I'm so busy doing for the people that I care about, that I have little time for myself.

54. _____ I've always been the one who listens to everyone else's problems.

55. _____ Other people see me as doing too much for others and not enough for myself.

56. _____ I am too self-conscious to show positive feelings to others (e.g., affection, showing I care).

57. _____ I find it embarrassing to express my feelings to others.

58. _____ I find it hard to be warm and spontaneous.

59. _____ I control myself so much that people think I am unemotional.

60. _____ People see me as uptight emotionally.

61. _____ I must be the best at most of what I do; I can't accept second best.

62. _____ I try to do my best; I can't settle for "good enough."

63. _____ I must meet all my responsibilities.

64. _____ I feel there is constant pressure for me to achieve and get things done.

65. _____ I can't let myself off the hook easily or make excuses for my mistakes.

66. _____ I have a lot of trouble accepting "no" for an answer when I want something from other people.

67. _____ I'm special and shouldn't have to accept many of the restrictions placed on other people.

68. _____ I hate to be constrained or kept from doing what I want.

69. _____ I feel that I shouldn't have to follow the normal rules and conventions other people do.

70. _____ I feel that what I have to offer is of greater value than the contributions of others.

71. _____ I can't seem to discipline myself to complete routine or boring tasks.

72. _____ If I can't reach a goal, I become easily frustrated and give up.

73. _____ I have a very difficult time sacrificing immediate gratification to achieve a long-range goal.

74. _____ I can't force myself to do things I don't enjoy, even when I know it's for my own good.

75. _____ I have rarely been able to stick to my resolutions.

APPENDIX 4:

BECK ANXIETY INVENTORY

BAI®

ME _____ DATE _____

ow is a list of common symptoms of anxiety. Please carefully read each item in the list. Indicate how much you have been bothered by each
nptom during the PAST WEEK, INCLUDING TODAY, by placing an X in the corresponding space in the column next to each symptom.

	NOT AT ALL	MILDLY It did not bother me much.	MODERATELY It was very unpleasant, but I could stand it.	SEVERELY I could barely stand it.
1. Numbness or tingling.				
2. Feeling hot.				
3. Wobbliness in legs.				
4. Unable to relax.				
5. Fear of the worst happening.				
6. Dizzy or lightheaded.				
7. Heart pounding or racing.				
8. Unsteady.				
9. Terrified.				
10. Nervous.				
11. Feelings of choking.				
12. Hands trembling				
13. Shaky.				
14. Fear of losing control.				
15. Difficulty breathing				
16. Fear of dying.				
17. Scared.				
18. Indigestion or discomfort in abdomen.				
19. Faint.				
20. Face flushed.				
21. Sweating (not due to heat).				

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APPENDIX 5:

BECK DEPRESSION INVENTORY II

BDI-II

Date:

Name: _____ Marital Status: _____ Age: _____ Sex: _____

Occupation: _____ Education: _____

Instructions: This questionnaire consists of 21 groups of statements. Please read each group of statements carefully, and then pick out the **one statement** in each group that best describes the way you have been feeling during the **past two weeks, including today**. Circle the number beside the statement you have picked. If several statements in the group seem to apply equally well, circle the highest number for that group. Be sure that you do not choose more than one statement for any group, including Item 16 (Changes in Sleeping Pattern) or Item 18 (Changes in Appetite).

1. Sadness

0 I do not feel sad.
1 I feel sad much of the time.
2 I am sad all the time.
3 I am so sad or unhappy that I can't stand it.

2. Pessimism

0 I am not discouraged about my future.
1 I feel more discouraged about my future than I used to be.
2 I do not expect things to work out for me.
3 I feel my future is hopeless and will only get worse.

3. Past Failure

0 I do not feel like a failure.
1 I have failed more than I should have.
2 As I look back, I see a lot of failures.
3 I feel I am a total failure as a person.

4. Loss of Pleasure

0 I get as much pleasure as I ever did from the things I enjoy.
1 I don't enjoy things as much as I used to.
2 I get very little pleasure from the things I used to enjoy.
3 I can't get any pleasure from the things I used to enjoy.

5. Guilty Feelings

0 I don't feel particularly guilty.
1 I feel guilty over many things I have done or should have done.
2 I feel quite guilty most of the time.
3 I feel guilty all of the time.

6. Punishment Feelings

0 I don't feel I am being punished.
1 I feel I may be punished.
2 I expect to be punished.
3 I feel I am being punished.

7. Self-Dislike

0 I feel the same about myself as ever.
1 I have lost confidence in myself.
2 I am disappointed in myself.
3 I dislike myself.

8. Self-Criticalness

0 I don't criticize or blame myself more than usual.
1 I am more critical of myself than I used to be.
2 I criticize myself for all of my faults.
3 I blame myself for everything bad that happens.

9. Suicidal Thoughts or Wishes

0 I don't have any thoughts of killing myself.
1 I have thoughts of killing myself, but I would not carry them out.
2 I would like to kill myself.
3 I would kill myself if I had the chance.

10. Crying

0 I don't cry anymore than I used to.
1 I cry more than I used to.
2 I cry over every little thing.
3 I feel like crying, but I can't.

_____ Subtotal Page 1

Continued on Back

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APPENDIX 6:

PIERCE SUICIDE INTENT SCALE

PIERCE SUICIDE INTENT SCALE – CLINICIAN RATED

PATIENT INTIALS_____

Please indicate best response based on recent suicide behaviour

CIRCUMSTANCES SCORE

ISOLATION – (0) SOMEONE PRESENT
(1) SOMEONE NEARBY OR ON TELEPHONE
(2) NO-ONE NEARBY

TIMING – (0) TIMED SO INTERVENTION POSSIBLE
(1) INTERVENTION UNLIKELY
(2) INTERVENTION HIGHLY UNLIKELY

PRECAUTIONS AGAINST RESCUE – (0) NONE
(1) PASSIVE – EG. ALONE IN ROOM, DOOR UNLOCKED
(2) ACTIVE PRECAUTIONS

ACTING TO GAIN HELP – (0) NOTIFIES FRIEND/ HELPER
(1) CONTACTS FRIEND/ HELPER, DOESN'T TELL
(2) NO CONTACT WITH FRIEND/ HELPER

FINAL ACTS IN ANTICIPATION – (0) NONE
(1) PARTIAL PREPARATION
(2) DEFINITE PLANS (EG. WILL, INSURANCE, GIFTS)

SUICIDE NOTE – (0) NONE
(1) NOTE TORN UP
(2) PRESENCE OF NOTE

MEDICAL RISK SCORE

PREDICTABLE OUTCOME – (0) SURVIVAL CERTAIN
(1) DEATH UNLIKELY
(2) DEATH LIKELY

DEATH WITHOUT MEDICAL TREATMENT – (0) NO
(1) UNCERTAIN
(2) YES

PIERCE SUICIDE INTENT SCALE – SELF REPORT

INITIALS_____

PLEASE UNDERLINE RESPONSE WHICH BEST ANSWERS STATEMENT RELATING TO YOUR RECENT SUICIDAL BEHAVIOUR

LETHALITY – (0) THOUGHT WOULD NOT KILL
(1) UNSURE IF LETHAL ACTION
(2) BELIEVED WOULD KILL

STATED INTENT – (0) DID NOT WANT TO DIE
(1) UNSURE
(2) WANTED TO DIE

PREMEDITATION – (0) IMPULSIVE
(1) CONSIDERED FOR <1 HOUR
(2) CONSIDERED FOR <1 DAY
(3) CONSIDERED FOR >1 DAY

REACTION TO ACT – (0) GLAD RECOVERED
(1) UNCERTAIN
(2) SORRY UNSUCCESSFUL

APPENDIX 7:

RISK OF REPETITION SCALE

RISK OF REPETITION SCALE

Please underscore if any of the following are indicated

- Antisocial personality
- Problem alcohol use
- Not living with a relative
- Previous out-patient psychiatric care
- Previous parasuicide admission
- Previous in-patient psychiatric care

Scoring: 5+ = significant risk of repetition

APPENDIX 8:

DETAILS OF PROCEDURE FOR COMPARISON GROUPS

Procedure for primary care mental health group, taken directly from Murray and Winton (2007, pg. 81)

"New patients attending adult out-patient appointment or Anxiety Management Groups at the Tayside Area Clinical Psychology Department between December 2002 and June 2003 were eligible for inclusion in the study, assuming their referral and presentation at first session concurred with inclusion and exclusion criteria.[1] For individual out-patient appointments, individuals were sent the information form describing the study along with the details of their first appointment, which stated that questionnaires for the study and further information would be provided by their clinician at their first session. Individuals who attended their first appointment were then invited by their clinician to participate in the study and were given a pack containing the relevant forms and questionnaires. Attendees at Anxiety Management Groups were invited by the principal researcher and a clinician to participate in the study at the end of the first group session. A brief verbal description of the study was provided (outlining aims and requirements) and the voluntary nature of participation emphasised. Out-patient and group attendees were each provided with a pack containing the information and consent forms, a sheet detailing demographic information and the four questionnaires to complete and return in a stamped addressed envelope to the principal researcher, if they chose to participate. (Alternatively, participants were able to bring back their questionnaires sealed in the stamped addressed envelope and hand them to their clinician at their next appointment, who could then forward them to the principal researcher.) Forms were not completed during the session – all clients were given the packs to take away and were therefore able to decide whether they wished to participate in their own time. The voluntary nature of participation in the study was highlighted and the fact that participation or non-participation would not affect treatment in any way."

Procedure for non-clinical comparison group, taken directly from Murray and Winton (2007, pg. 82)

"Control participants were approached individually, usually by the principal researcher but some by their line manager, and given a brief verbal description of the study. The voluntary nature of participation was emphasised and the fact that no identifying information would be required. Those indicating they would like to participate were given a pack containing the control information and consent forms (including demographic information) and the four questionnaires in an addressed envelope to take away with them and return completed, if they consented to take part, by internal mail."

---

[1] Inclusion criteria – "any individual referred to the Tayside Area Psychological Department who were offered a new appointment between December 2002 and June 2003 was viable for inclusion in the study. In addition, individuals on the general adult waiting list who opted-into Anxiety Management groups being conducted by Tayside Area Clinical Psychology Department between December 2002 and June 2003 were also eligible for inclusion. However, individuals were excluded from the study if they met any of the following diagnostic criteria: bipolar disorder, active psychotic disorder or a history of psychosis, active substance abuse, learning disability or head injury...if clinician felt that inclusion in the study was inappropriate for any reason following first presentation.... they did not invite their client to participate" (Murray & Winton, 2007, pg. 72-73).

APPENDIX 9:

PARTICIPANT INFORMATION SHEET

TAYSIDE PARTICIPANT INFORMATION SHEET

The role of parental bonding and schemas in suicidal behaviour

My name is Rosanna Dale and I am completing my final year of Clinical Psychology post-graduate training (D.Clin Psych) at the University of Edinburgh. I am required to undertake a project as part of my course and invite you to take part in the following study. However, before you decide to do so, I need to be sure that you firstly understand why I am doing it, and secondly, what it would involve if you agreed. I am therefore providing you with the following information. Please read it carefully and be sure to ask any questions you might have. I will do my best to explain the project to you and provide you with any further information you may ask for now or later.

Background to the project

This project is a joint project between the University of Edinburgh and NHS Tayside. We are looking at some of the factors which may be important in mental health. In particular, your perceptions of the parenting you received as a child will be examined and also what we call your schemas – the way you view the world. It is hoped that this will help better understand those in distress to help detect difficulties early on.

What does the study entail?

The study would involve you meeting with me, Rosanna Dale, the researcher, for an interview in which you will be asked to complete 5 questionnaires and to answer a few demographic questions. The questionnaires include 2 symptom checklists related to any psychological difficulties you may have at present, a questionnaire looking at your experiences of your relationships with your parents, a questionnaire looking at your beliefs about yourself and others. A final questionnaire will look at your recent suicidal behaviour and is completed in part by yourself and in part by the Liaison Psychiatric Nurse. The questionnaires are all multiple choice and will take around 20-30 minutes to complete. You do not have to put your name of the questionnaires, only your initials. You can meet with me to complete them in the privacy of your room.

Do I have to take part?

It is up to you whether or not you take part. If you do so, you will be given this information sheet to keep and will be asked to sign a consent form. Only once you have read the information sheet and if you consent to participating, will you meet with me. You are free to withdraw at any time and without giving a reason. A decision to withdraw at anytime, or a decision to take part, will not affect the standard of care you receive. This study is entirely separate from any contact you may be having with the NHS.

What are the discomforts or risks?

Some questions in the questionnaires may identify areas of difficulties or feelings that you had not fully considered before. If this happens and you are having difficulty coping with them, please let me know or feel free to contact a member of staff on duty to provide advice and support. We can discuss future care provision where necessary.

What will happen to the information you collect about me?

If you are willing to take part in the study, all the information about you and the responses that you give on questionnaires will be confidential with no names being asked of you. No personal information will be used in the write up of the study. The responses you give to the questionnaires will be collated with other participants' responses to assess if perceptions of parenting and views of the world are related to suicidal behaviour. All data will be stored on a password protected computer with no personal identifiable information. Access to the questionnaires will only be granted to the principle researcher, Rosanna Dale and supervisor, Kevin Power.

What are your rights?

Participation in the study is entirely voluntary and you are free to refuse to take part or to withdraw from the study at any point without having to provide a reason. Your decision whether or not to participate in the study will have no influence on any current or future psychological or medical care you receive. It will also have no influence on your relationship with any healthcare staff you are involved with.

The Tayside Committee on Medical Research and Ethics, which has responsibility for scrutinising all proposals for medical research on humans in Tayside, has examined the proposal and has raised no objections from the point of view of medical ethics. The committee will also receive regular reports from NHS Tayside Monitors who will examine the records of research while it is in progress.

If you are willing to take part in this study please complete the consent form on the next page. This consent form will be kept separately from any information about you and the questionnaires you complete to protect your confidentiality. If you wish a copy of the overall results from the study, you can get this on request from myself at the number below. The study will be completed by August 2007.

If you have any difficulties or further questions, please contact me:
Rosanna Dale: 01382 306150

What happens if I am injured or have a complaint as a result of taking part in this study?

If you believed that you have been harmed in any way by taking part in this research the normal NHS complaints mechanism would still be available to you. To register a complaint against the NHS in Tayside or to receive more information about this, you should contact:

Complaints and Claims Manager
Complaints and Advice Team
Level 7
Ninewells Hospital
Dundee
DD1 9SY
or
Freephone: 0800 027 5507
Email: complaints.tayside@nhs.net

This study is sponsored by the University of Edinburgh who have taken out insurance cover for this purpose. Therefore, you may receive compensation in the event you are harmed by something unforeseen, ie, when there is no negligence on the part of those conducting the study. This will depend upon review of the circumstances that led to harm or injury and the likelihood it was linked to your participation in the study. Such complaints should take this up initially with the lead investigator who is in charge of the study locally.

Thank you for taking the time to read and consider the above information. If you are willing to take part in the study, please take time to carefully read and complete the consent form to indicate your consent to participate.

APPENDIX 10:

PARTICIPANT CONSENT FORM

The role of parenting and schemas in suicidal behaviour

CONSENT FORM

Please tick (✓) appropriate box

Have you read and understood the Participant Information Sheet?
Yes ☐ No ☐

Have you been given an opportunity to ask questions and further discuss this study?
Yes ☐ No ☐

Have you received satisfactory answers to all of your questions?
Yes ☐ No ☐

Have you now received enough information about this study?
Yes ☐ No ☐

Do you understand that your participation is entirely voluntary?
Yes ☐ No ☐

Do you understand that you are free to withdraw from this study:

At any time?
Yes ☐ No ☐

Without having to give a reason for withdrawing?
Yes☐ No ☐

Without this affecting your present or future medical care?
Yes ☐ No ☐

Do you agree to take part in this study?
Yes ☐ No ☐

Participant's signature ..... Date .....

THANK YOU for agreeing to take part in this research

APPENDIX 11:

SEMI-STRUCTURED INTERVIEW SCHEDULE

Semi-structured Interview Schedule

- Review of information sheet – introduction to study, answer any queries about participation
- Pierce Suicide Intent Scale – consists of self-report questions and assessor rated questions
- Demographic information

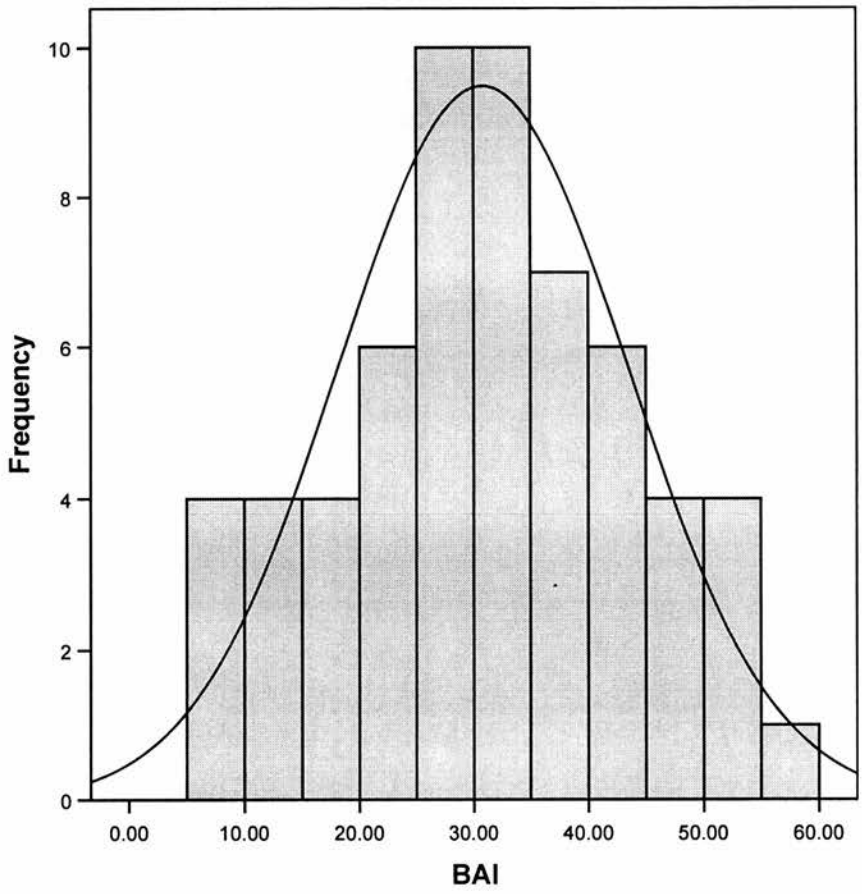
The remaining questionnaires listed below are all self-report

- Beck's Anxiety Inventory
- Beck's Depression Inventory
- Parental Bonding Instrument
- Young Schema Questionnaire

- Review of participation

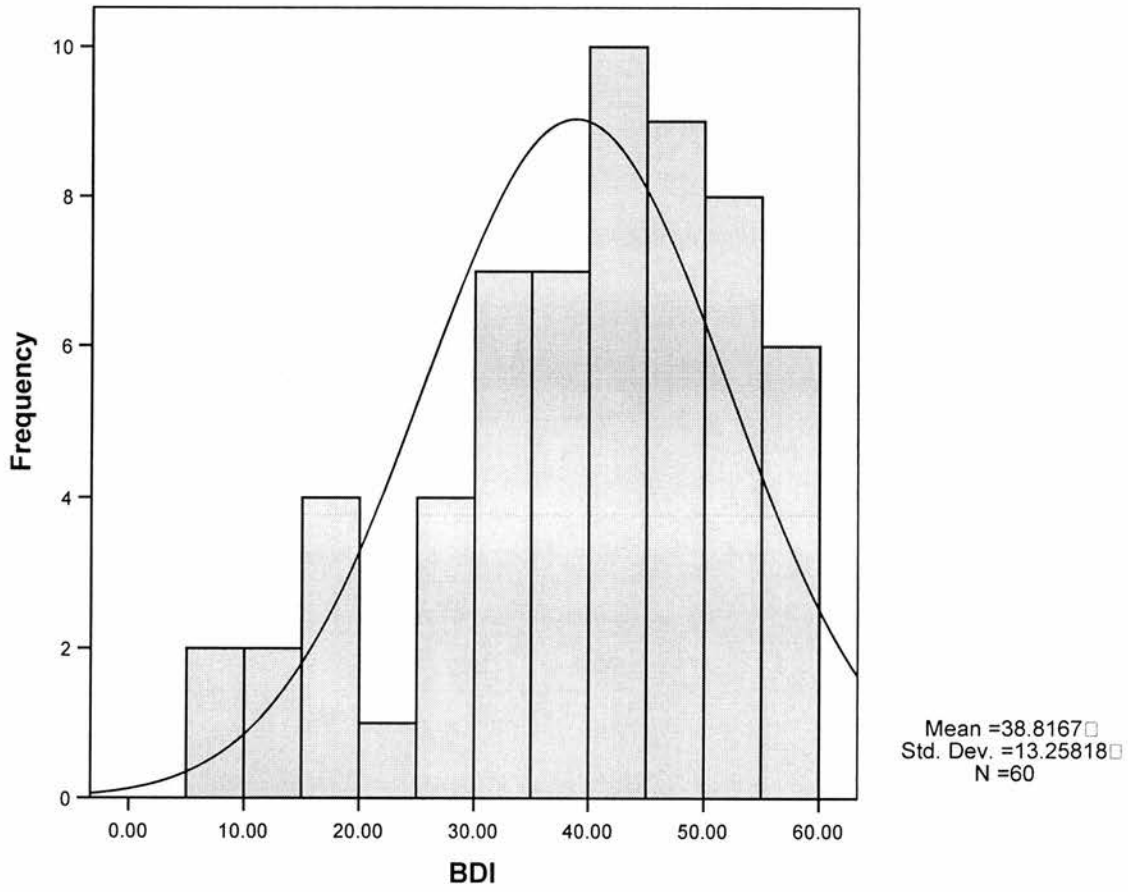
APPENDIX 12:

HISTOGRAM OF BAI SCORES


Frequency
10
8
6
4
2
0
0.00
10.00
20.00
30.00
40.00
50.00
60.00
BAI
Mean =30.80
Std. Dev. =12.61933
N =60

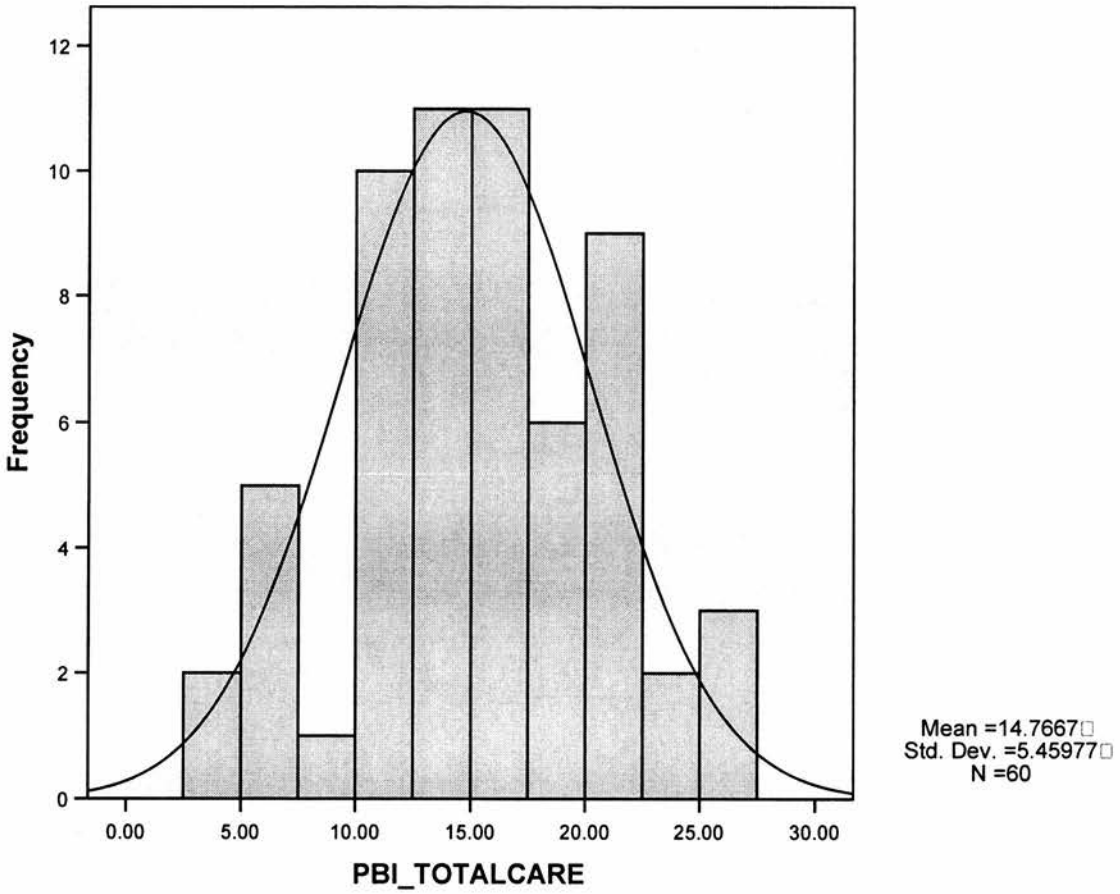
APPENDIX 13:

HISTOGRAM OF BDI


Frequency
10
8
6
4
2
0
0.00
10.00
20.00
30.00
40.00
50.00
60.00
BDI
Mean =38.8167
Std. Dev. =13.25818
N =60

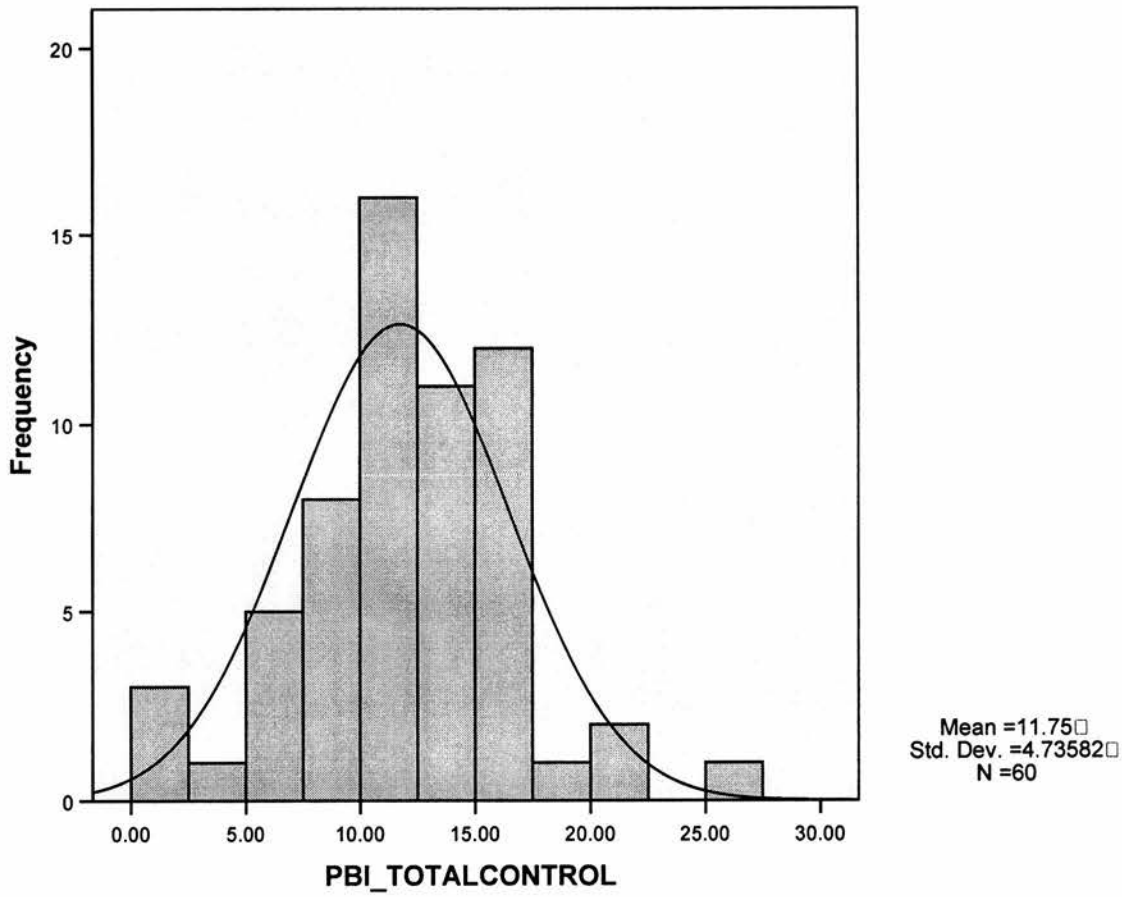
APPENDIX 14:

HISTOGRAM OF PBI PARENTAL CARE SCORES


Frequency
12
10
8
6
4
2
0
0.00
5.00
10.00
15.00
20.00
25.00
30.00
PBI_TOTALCARE
Mean =14.7667
Std. Dev. =5.45977
N =60

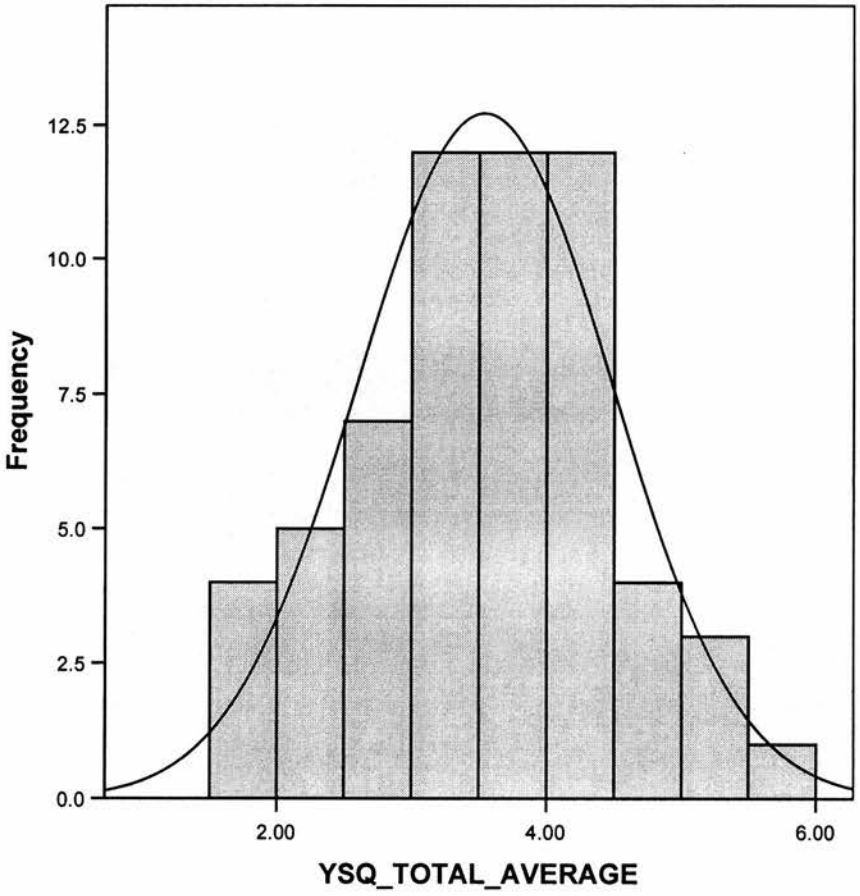
APPENDIX 15:

HISTOGRAM OF PBI PARENTAL CONTROL SCORES


Frequency
20
15
10
5
0
0.00
5.00
10.00
15.00
20.00
25.00
30.00
PBI_TOTALCONTROL
Mean =11.75
Std. Dev. =4.73582
N =60

APPENDIX 16:

HISTOGRAM OF YSQ SCORES


12.5
10.0
7.5
5.0
2.5
0.0
Frequency
2.00
4.00
6.00
YSQ_TOTAL_AVERAGE
Mean =3.5388
Std. Dev. =0.94056
N =60

APPENDIX 17:

CORRELATION MATRIX OF 15 SCHEMAS OF YSQ

	ED	AB	MA	SA	DS	FA	DE	VU	EN	SU	SS	EI	US	ET	IS
ED Pear. Cor.	1	.400**	.535**	.334**	.556**	.295*	.360**	.366**	.074	.416**	.197	.308*	.245	.246	.048
Sig. 2t		.002	.000	.009	.000	.022	.005	.004	.573	.001	.131	.017	.060	.058	.718
N	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
AB Pear. Cor.	.400**	1	.483**	.484**	.590**	.418**	.552**	.491**	.394**	.588**	.034	.277*	.261	.377**	.315*
Sig. 2t	.002		.000	.000	.000	.001	.000	.000	.002	.000	.797	.032	.044	.003	.014
N	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
MA Pear. Cor.	.535**	.483**	1	.481**	.633**	.490**	.598**	.534**	.096	.563**	.238	.578**	.193	.524**	.408**
Sig. 2t	.000	.000		.000	.000	.000	.000	.000	.465	.000	.068	.000	.139	.000	.001
N	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
SA Pear. Cor.	.334**	.484**	.481**	1	.769**	.644**	.635**	.685**	.146	.551**	-.103	.530**	.175	.535**	.359**
Sig. 2t	.009	.000	.000		.000	.000	.000	.000	.265	.000	.434	.000	.181	.000	.005
N	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
DS Pear. Cor.	.556**	.590**	.633**	.769**	1	.720**	.646**	.630**	.131	.553**	-.045	.569**	.265*	.582**	.401**
Sig. 2t	.000	.000	.000	.000		.000	.000	.000	.317	.000	.731	.000	.041	.000	.002
N	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
FA Pear. Cor.	.295*	.418**	.490**	.644**	.720**	1	.548**	.522**	.147	.487**	-.236	.387**	-.032	.442**	.441**
Sig. 2t	.022	.001	.000	.000	.000		.000	.000	.262	.000	.070	.002	.806	.000	.000
N	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
DE Pear. Cor.	.360**	.552**	.598**	.635**	.646**	.548**	1	.640**	.372**	.736**	.144	.393**	.158	.404**	.459**
Sig. 2t	.005	.000	.000	.000	.000	.000		.000	.003	.000	.271	.002	.227	.001	.000
N	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
VU Pear. Cor.	.366**	.491**	.534**	.685**	.630**	.522**	.640**	1	.368**	.601**	.183	.481**	.306*	.497**	.451**
Sig. 2t	.004	.000	.000	.000	.000	.000	.000		.004	.000	.162	.000	.018	.000	.000
N	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60

	ED	AB	MA	SA	DS	FA	DE	VU	EN	SU	SS	EI	US	ET	IS
EN Pear. Cor.	.074	.394**	.096	.146	.131	.147	.372**	.368**	1	.440**	.043	.188	.112	.263*	.262*
Sig. 2t	.573	.002	.465	.265	.317	.262	.003	.004		.000	.745	.150	.392	.042	.043
N	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
SU Pear. Cor.	.416**	.588**	.563**	.551**	.553**	.487**	.736**	.601**	.440**	1	.099	.428**	.169	.422**	.539**
Sig. 2t	.001	.000	.000	.000	.000	.000	.000	.000	.000		.451	.001	.198	.001	.000
N	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
SS Pear. Cor.	.197	.034	.238	-.103	-.045	-.236	.144	.183	.043	.099	1	.254*	.298*	.244	.091
Sig. 2t	.131	.797	.068	.434	.731	.070	.271	.162	.745	.451		.050	.021	.061	.488
N	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
EI Pear. Cor.	.308*	.277*	.578**	.530**	.569**	.387**	.393**	.481**	.188	.428**	.254*	1	.264*	.921**	.473**
Sig. 2t	.017	.032	.000	.000	.000	.002	.002	.000	.150	.001	.050		.041	.000	.000
N	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
US Pear. Cor.	.245	.261*	.193	.175	.265*	-.032	.158	.306*	.112	.169	.298*	.264*	1	.260*	.180
Sig. 2t	.060	.044	.139	.181	.041	.806	.227	.018	.392	.198	.021	.041		.044	.168
N	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
ET Pear. Cor.	.246	.377**	.524**	.535**	.582**	.442**	.404**	.497**	.263*	.422**	.244	.921**	.260*	1	.455**
Sig. 2t	.058	.003	.000	.000	.000	.000	.001	.000	.042	.001	.061	.000	.044		.000
N	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
IS Pear. Cor.	.048	.315*	.408**	.359**	.401**	.441**	.459**	.451**	.262*	.539**	.091	.473**	.180	.455**	1
Sig. 2t	.718	.014	.001	.005	.002	.000	.000	.000	.043	.000	.488	.000	.168	.000	
N	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).
ED- emotional deprivation; **AB**- abandonment; **MA**- mistrust/ abuse; **SA**- social alienation; **DS**- defectivenss/ shame; **FA**- failure; **DE**- dependency; **VU**- vulnerability to harm; **EN**- enmeshment; **SU**- subjugation; **SS**- self-sacrifice; **EI**- emotional inhibition; **US**- unrelenting standards; **ET**- entitlement; **IS**- insufficient self-control

APPENDIX 18:

STEM AND LEAF PLOTS FOR PBI-CARE, PBI CONTROL, YSQ, BAI AND BDI

STEM AND LEAF PLOTS FOR PBI- PARENTAL CARE

Suicidal Behaviour Group:

```
Frequency     Stem &  Leaf

     2.00       0 .  34
     6.00       0 .  666668
    21.00       1 .  000011111233333344444
    17.00       1 .  55555555666888899
    11.00       2 .  00000111233
     3.00       2 .  557

Stem width:     10.00
Each leaf:       1 case(s)
```

Primary Care Mental Health Group:

```
Frequency     Stem &  Leaf

     4.00       0 .  0022
     7.00       0 .  5669999
     8.00       1 .  00112344
    18.00       1 .  555556666677788999
     6.00       2 .  001113
     1.00       2 .  5
     2.00       3 .  00

Stem width:     10.00
Each leaf:       1 case(s)
```

Non-clinical Comparison Group:

```
Frequency     Stem &  Leaf

     1.00       0 .  9
    11.00       1 .  01122234444
    12.00       1 .  555666888999
    14.00       2 .  00001111122234
     9.00       2 .  555667788
     1.00       3 .  0

Stem width:     10.00
Each leaf:       1 case(s)
```

STEM AND LEAF PLOTS FOR PBI- PARENTAL CONTROL

Suicidal Behaviour Group:

```
Frequency     Stem &  Leaf

     4.00        0 .  1224
    13.00        0 .  5577788889999
    27.00        1 .  000000001111122233333344444
    13.00        1 .  5555666677778
     2.00        2 .  01
     1.00 Extremes    (>=27)

Stem width:     10.00
Each leaf:       1 case(s)
```

Primary Care Mental Health Group:

```
Frequency     Stem &  Leaf

     1.00        0 .  2
    14.00        0 .  56777778899999
    18.00        1 .  000111111222233344
    10.00        1 .  5666788889
     3.00        2 .  234

Stem width:     10.00
Each leaf:       1 case(s)
```

Non-clinical Comparison Group:

```
Frequency     Stem &  Leaf

     3.00        0 .  001
     5.00        0 .  22233
     8.00        0 .  44445555
     3.00        0 .  677
     8.00        0 .  88888999
     5.00        1 .  00011
     6.00        1 .  222333
     5.00        1 .  44455
     3.00        1 .  677
     1.00        1 .  8
     1.00 Extremes    (>=28)

Stem width:     10.00
Each leaf:       1 case(s)
```

STEM AND LEAF PLOTS FOR YSQ SCORES – TOTAL AVERAGE

Suicidal Behaviour Group:

```
Frequency     Stem &  Leaf

     4.00       1 .  5788
     5.00       2 .  00124
     7.00       2 .  5577889
    13.00       3 .  0000222344444
    11.00       3 .  56667788889
    12.00       4 .  000011222334
     4.00       4 .  6799
     3.00       5 .  012
     1.00       5 .  5

Stem width:      1.00
Each leaf:       1 case(s)
```

Primary Care Mental Health Group:

```
Frequency     Stem &  Leaf

     1.00       1 .  1
     5.00       1 .  66789
     9.00       2 .  000012224
    10.00       2 .  5667778888
     8.00       3 .  01222334
     9.00       3 .  677888899
     2.00       4 .  00
     1.00       4 .  9
     1.00       5 .  0

Stem width:      1.00
Each leaf:       1 case(s)
```

Non-clinical Comparison Group:

```
Frequency     Stem &  Leaf

     8.00       1 .  12333444
    21.00       1 .  555555667777888888999
    13.00       2 .  0001222234444
     3.00       2 .  778
     2.00       3 .  22
     1.00 Extremes    (>=3.8)

Stem width:      1.00
Each leaf:       1 case(s)
```

STEM AND LEAF PLOTS FOR BAI

Suicidal Behaviour Group:

```
 Frequency     Stem &  Leaf

     4.00        0 .  7899
     8.00        1 .  23446788
    16.00        2 .  0112225577888999
    17.00        3 .  01123444445566889
    10.00        4 .  0012446889
     4.00        5 .  0004
     1.00        6 .  0

 Stem width:     10.00
 Each leaf:       1 case(s)
```

Primary Care Mental Health Group:

```
 Frequency     Stem &  Leaf

     3.00        0 .  234
     9.00        0 .  566777889
     5.00        1 .  01124
     8.00        1 .  55778889
     4.00        2 .  0123
     7.00        2 .  5666779
     3.00        3 .  012
     2.00        3 .  68
     4.00        4 .  2233
     1.00 Extremes    (>=61)

 Stem width:     10.00
 Each leaf:       1 case(s)
```

Non-clinical Comparison Group:

```
 Frequency     Stem &  Leaf

    10.00        0 .  0000001111
    14.00        0 .  22222222233333
    10.00        0 .  4444444455
     3.00        0 .  677
     3.00        0 .  889
     3.00        1 .  001
     1.00        1 .  3
     1.00        1 .  4
     3.00 Extremes    (>=15)

 Stem width:     10.00
 Each leaf:       1 case(s)
```

STEM AND LEAF PLOTS FOR BDI

Suicidal Behaviour Group:

```
 Frequency    Stem &  Leaf

     2.00        0 .  69
     6.00        1 .  345779
     5.00        2 .  45588
    14.00        3 .  11133445678899
    19.00        4 .  0011222444667777999
    14.00        5 .  00112344555599

 Stem width:     10.00
 Each leaf:       1 case(s)
```

Primary Care Mental Health Group:

```
 Frequency    Stem &  Leaf

     3.00        0 .  122
     3.00        0 .  679
     8.00        1 .  11222234
     6.00        1 .  566789
     4.00        2 .  0004
     4.00        2 .  6789
     6.00        3 .  033344
     4.00        3 .  6679
     3.00        4 .  000
     4.00        4 .  5579
     1.00        5 .  0

 Stem width:     10.00
 Each leaf:       1 case(s)
```

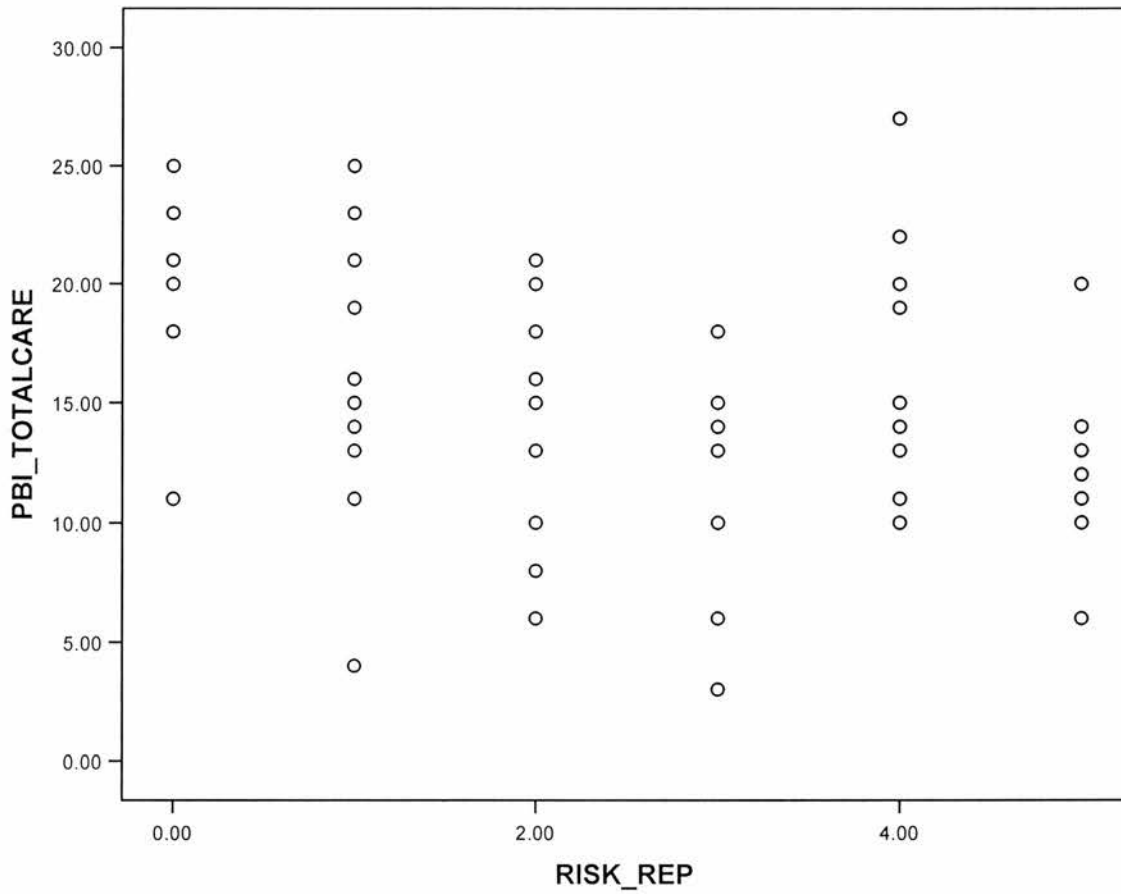
Non-clinical Comparison Group:

```
 Frequency    Stem &  Leaf

    17.00        0 .  00001222333334444
    17.00        0 .  55666666778999999
     4.00        1 .  0124
     4.00        1 .  6889
     4.00        2 .  0012
     2.00 Extremes    (>=29)

 Stem width:     10.00
 Each leaf:       1 cas
```

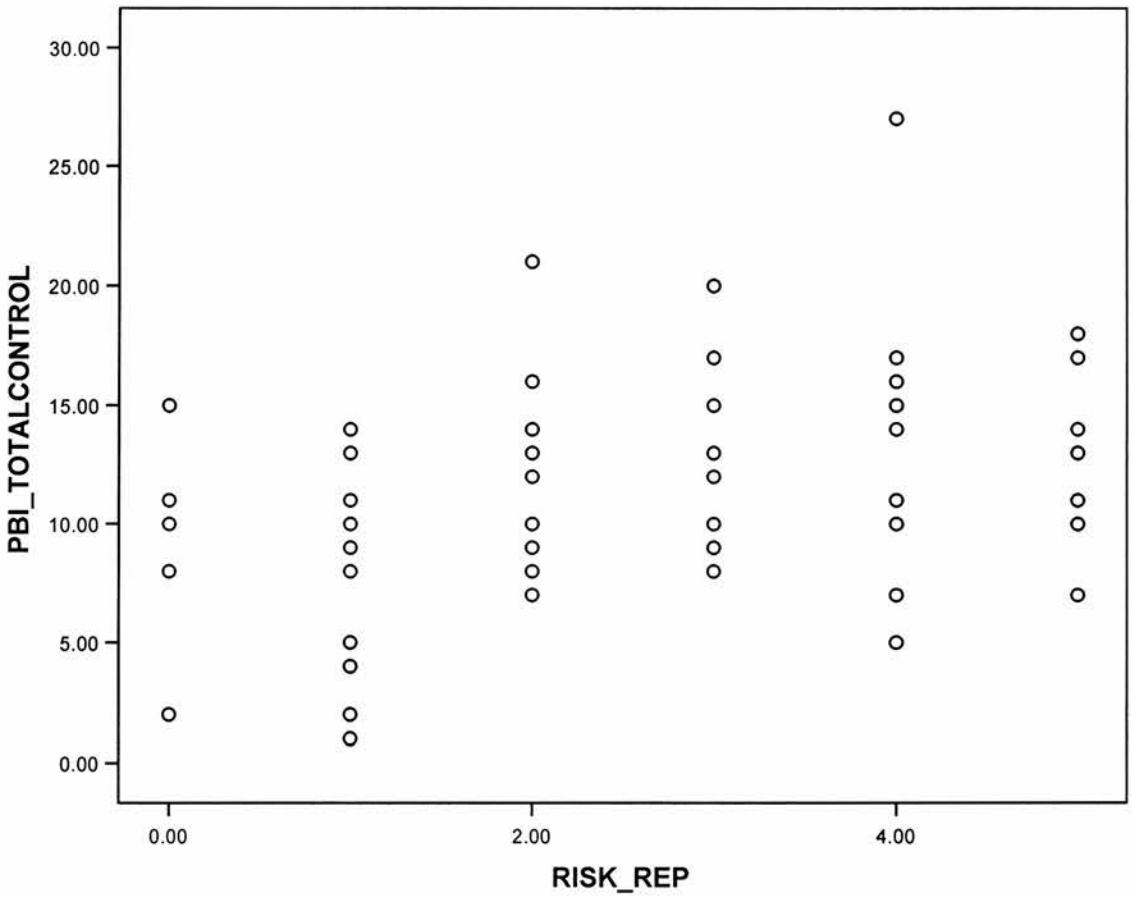
APPENDIX 19:

GRAPHS OF CORRELATIONS BETWEEN PARENTAL BONDING AND RISK OF REPETITION

GRAPH OF CORRELATION BETWEEN PARENTAL CARE AND RISK OF REPETITION – 2 TAILED



GRAPH OF CORRELATION BETWEEN PARENTAL CONTROL AND RISK OF REPETITION – 2 TAILED



APPENDIX 20:

CORRELATION MATRIX OF RISK OF REPETITION AND EMS

CORRELATIONS BETWEEN RISK OF REPETITION AND EMS

	ED	AB	MA	SA	DS	FA	DE	VU	EN	SU	SS	EI	US	ET	IS
RISK OF REPETITION															
Pear. Cor.	.157	.185	.207	**.513****	**.334****	.126	.227	**.311***	.135	**.304***	.089	**.286***	.195	**.265***	**.300***
Sig. 2t	.232	.158	.112	**.000**	**.009**	.336	.081	**.016**	.304	**.018**	.497	**.027**	.135	**.040**	**.020**
N	60	60	60	**60**	**60**	60	60	**60**	60	**60**	60	**60**	60	**60**	**60**

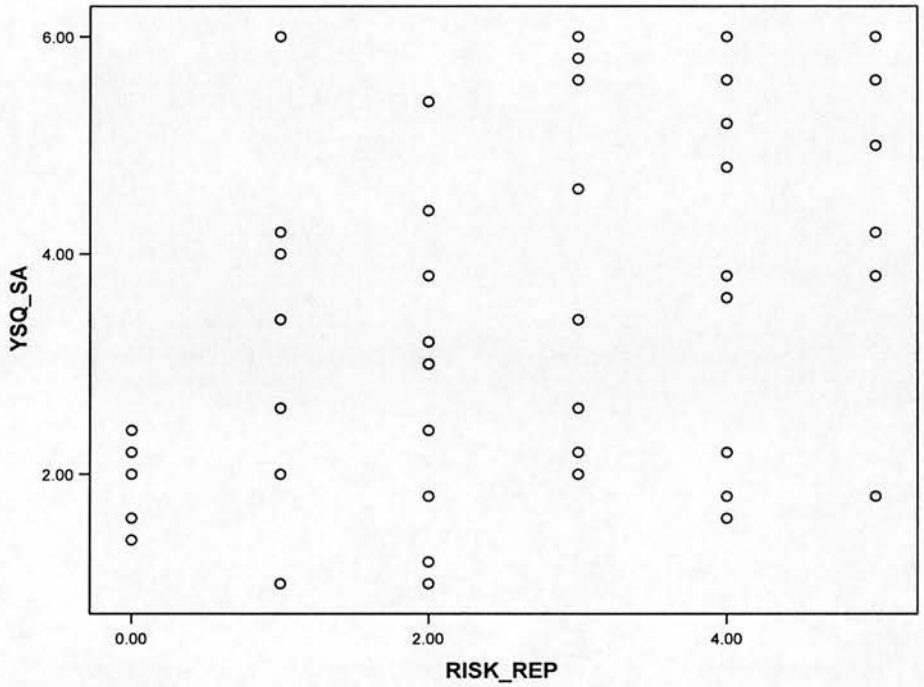
** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed). Significant correlations are highlighted in **bold.**

ED- emotional deprivation; **AB**- abandonment; **MA**- mistrust/ abuse; **SA**- social alienation; **DS**- defectivenss/ shame; **FA**- failure; **DE**- dependency; **VU**- vulnerability to harm; **EN**- enmeshment; **SU**- subjugation; **SS**- self-sacrifice; **EI**- emotional inhibition; **US**- unrelenting standards; **ET**- entitlement; **IS**- insufficient self-control

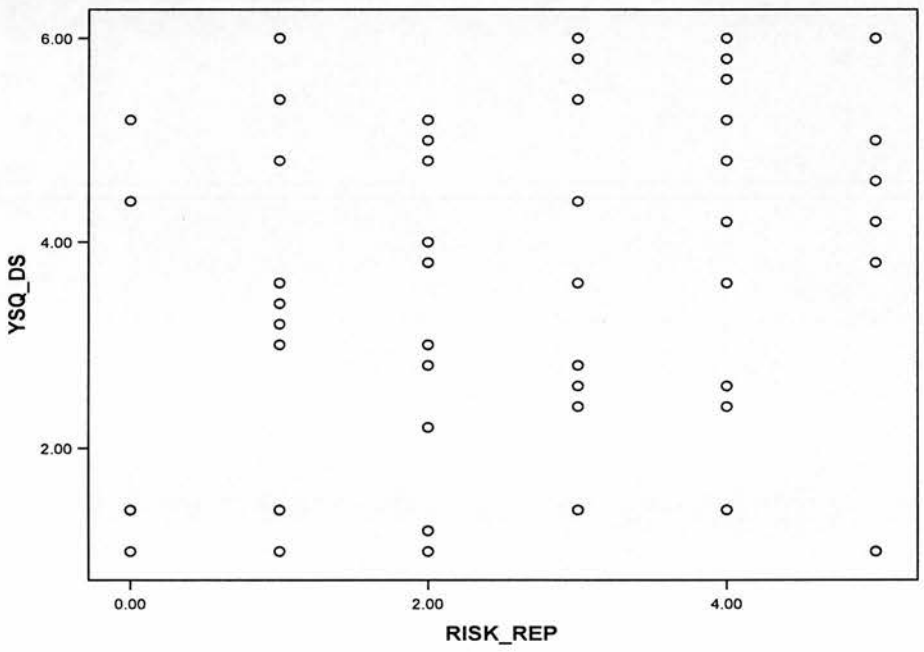
APPENDIX 21:

GRAPHS OF CORRELATIONS BETWEEN RISK OF REPETITION AND; SOCIAL ALIENATION; DEFECTIVENESS/ SHAME; VULNERABILITY TO HARM; SUJUGATION; EMOTIONAL INHIBITION; ENTITLEMENT; AND INSUFFICIENT SELF-CONTROL

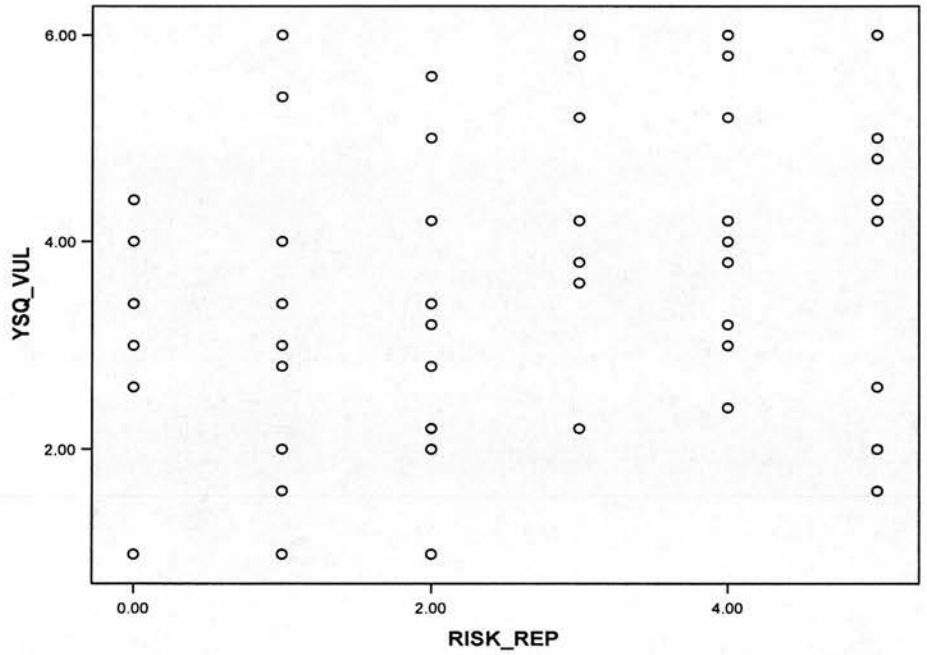
GRAPH OF CORRELATION BETWEEN RISK OF REPETITION AND SOCIAL ALIENATION:



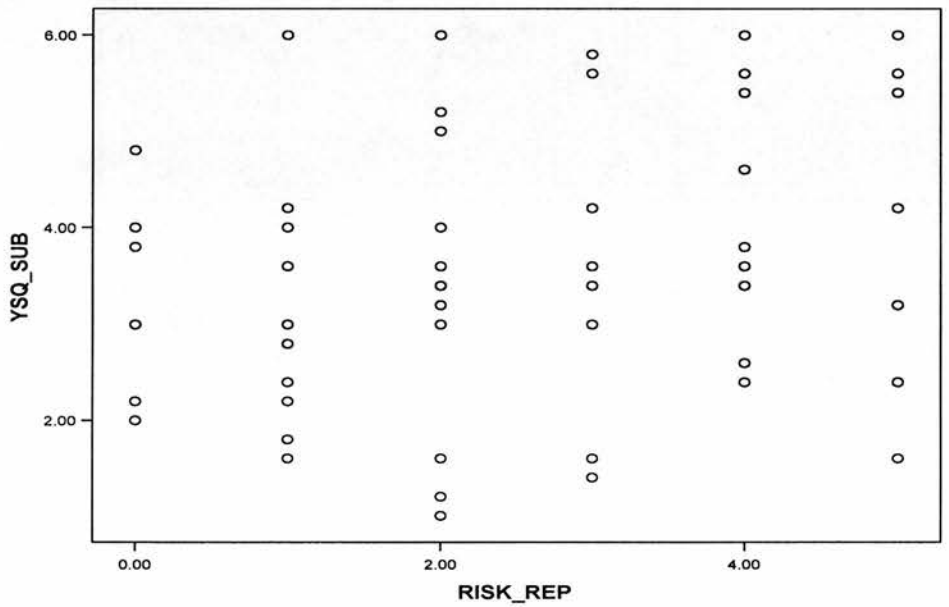
GRAPH OF CORRELATION BETWEEN RISK OF REPETITION AND DEFECTIVENESS/ SHAME:



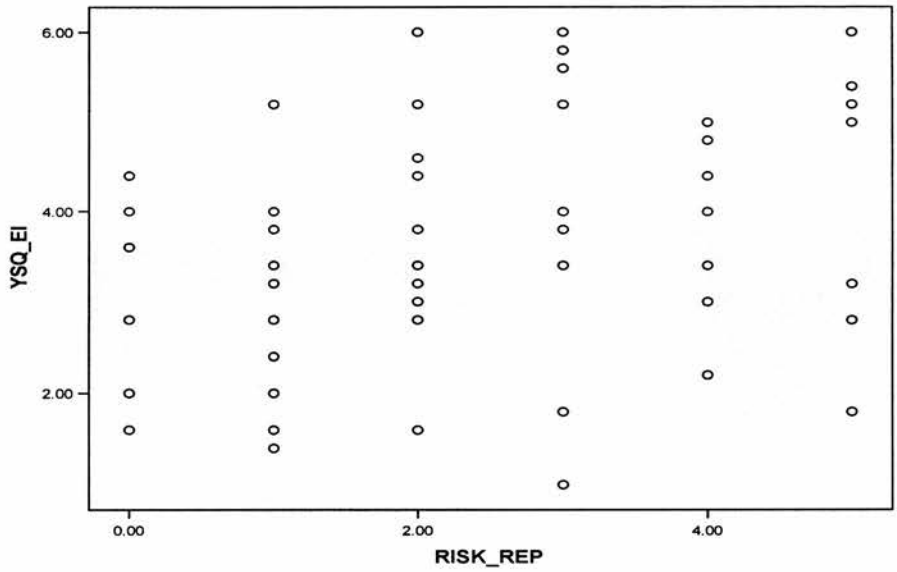
GRAPH OF CORRELATION BETWEEN RISK OF REPETITION AND VULNERABILITY TO HARM:



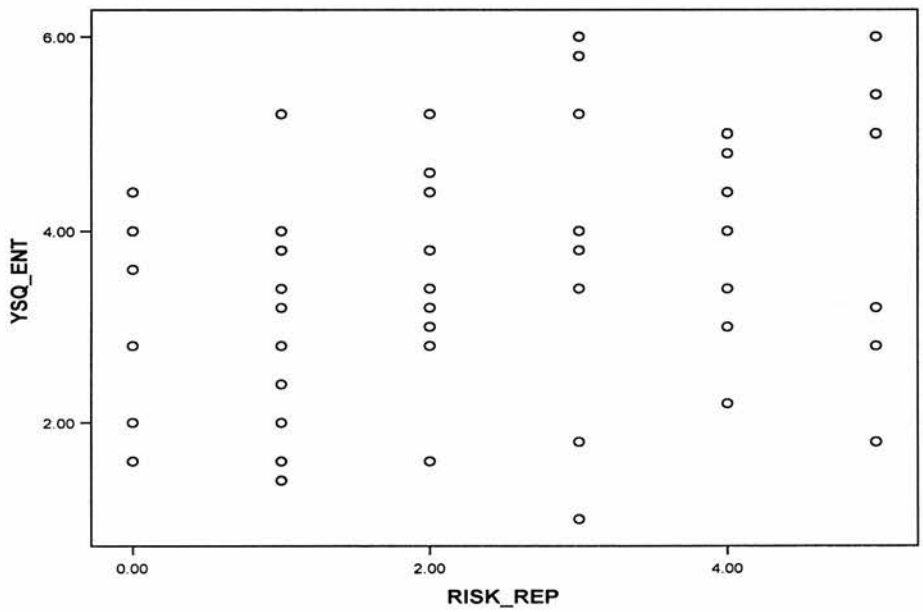
GRAPH OF CORRELATION BETWEEN RISK OF REPETITION AND SUBJUGATION:



GRAPH OF CORRELATION BETWEEN RISK OF REPETITION AND EMOTIONAL INHIBITION:



GRAPH OF CORRELATION BETWEEN RISK OF REPETITION AND ENTITLEMENT:



GRAPH OF CORRELATION BETWEEN RISK OF REPETITION AND INSUFFICIENT SELF-CONTROL: